Only 85p

DM 6.8

commodore HORIZONS

February 1986

Team up with

MERCENARY

SEE! M/C ACTION IN
SPACE SNAKES

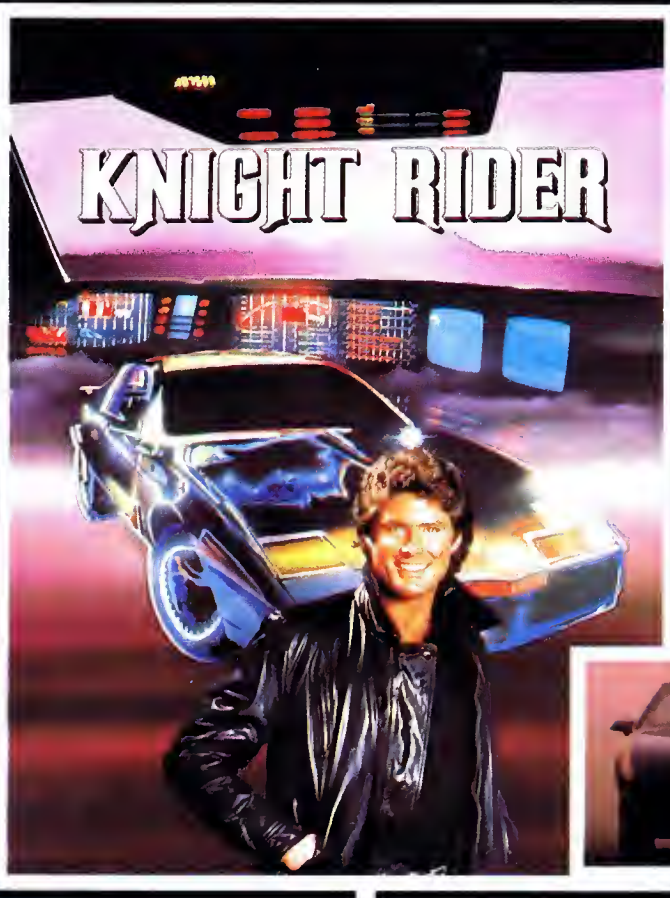
HEAR! COMMODORE'S
FM VOICE MODULE

WIN! ACTIVISION'S
KORONIS RIFT

WIN! VIC 20 GAMES FROM LLAMASOFT

All the AC

OCC



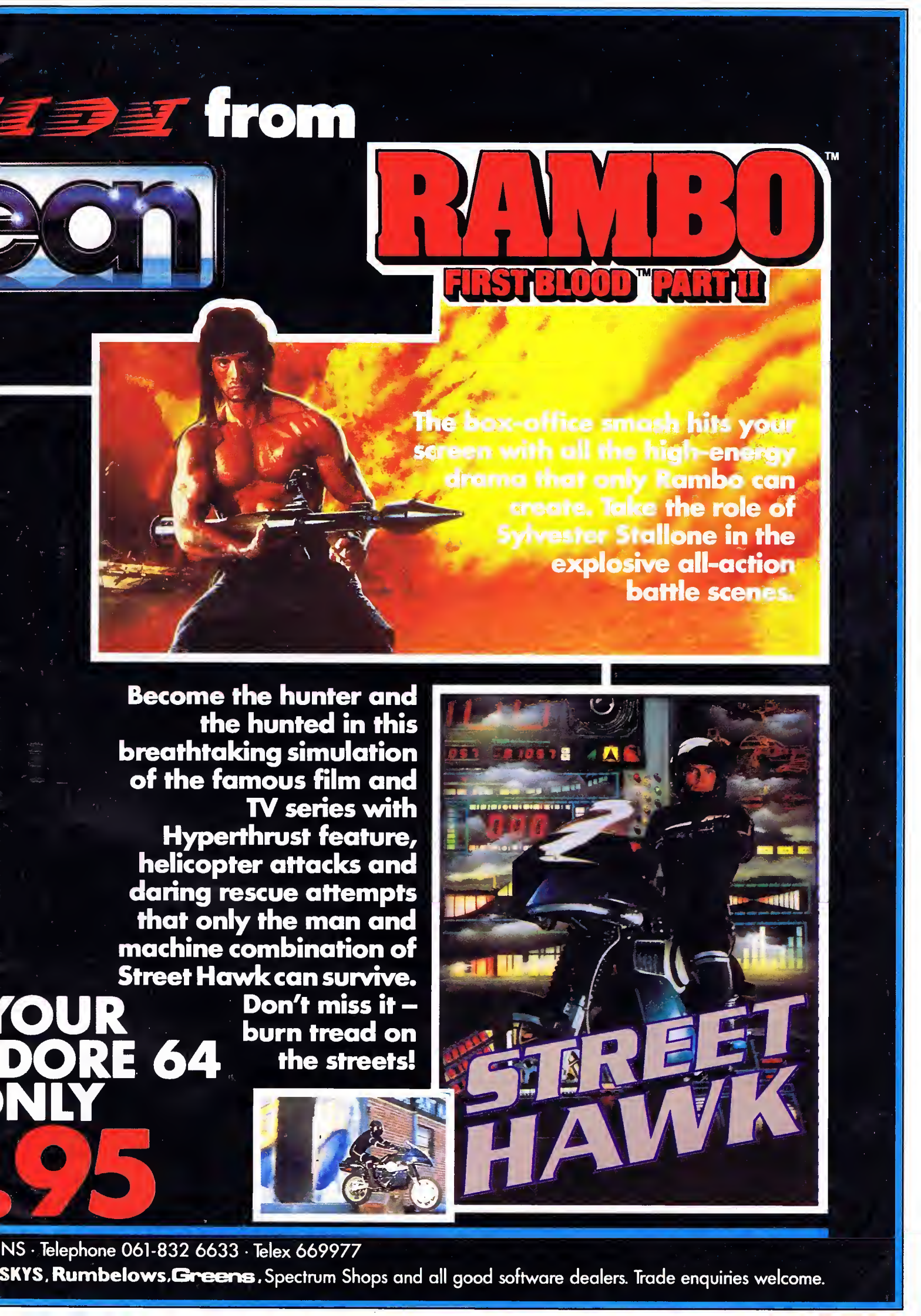
Your driving skills will be driven to the limit in this simulation of the hit T.V. series. Just you and a car named "KITT" – the ultimate driving team!

Warrior robots in disguise. Earth has been invaded by powerful robots from the planet Cybertron.
Transform into the role of the heroic autobots (Jazz, Hound, Mirage and Optimus Prime) in their deadly battle with the evil decepticons.
TRANSFORMERS – More than meets the eye!

FOR COMMO AT £8

Ocean House · 6 Central Street · Manchester · M

Ocean Software is available from selected branches of: Boots WHSMITH, John Menzies, WOOLWORTH



from
RAMBO™
FIRST BLOOD™ PART II
The box-office smash hits your screen with all the high-energy drama that only Rambo can create. Take the role of Sylvester Stallone in the explosive all-action battle scenes.
Become the hunter and the hunted in this breathtaking simulation of the famous film and TV series with Hyperthrust feature, helicopter attacks and daring rescue attempts that only the man and machine combination of Street Hawk can survive. Don't miss it – burn tread on the streets!
STREET HAWK
YOUR
DORE 64
NLY
.95
NS · Telephone 061-832 6633 · Telex 669977
SKYS, Rumbelows, Greens, Spectrum Shops and all good software dealers. Trade enquiries welcome.

· AIR · COMBAT · EMULATOR ·

· BY CASCADE GAMES ·

1-3 Haywra Crescent Harrogate

£10.95
INC. **FREE** WATCH AND POSTAGE

THE FASTEST GAME ON TWO WINGS! AND A FREE MULTIFUNCTION CALCULATOR WATCH

The AIR COMBAT EMULATOR, packed with exciting features, is by far the fastest, most realistic flight simulator available. For the first time on a home computer, feel what it is **really** like to fly a high performance military jet and engage tanks, missiles, ships, helicopter gun-ships and two types of cunning intelligent enemy aircraft.

Featuring over 300 sprite images, ACE has the smoothest, most detailed cockpit view of hills, trees and other ground objects ever achieved thanks to specially developed Dynamic Graphic Technique (D.G.T.©) allowing sensational high speed **solid** 3D graphics.

In combat, your head will spin as you struggle with the help of the advanced avionics which include a rear-view camera and radar, to stay alive long enough to do some damage to the enemy.

The unique two seat flying option (pilot, navigator/weapons man) and **Synchro Speech**© which passes vital aircraft condition information to the flight crew without freezing the action combined with dynamic tactical map, take offs and landings, summer, winter and night-time flying and a remarkably realistic in-flight refuelling option makes ACE the ultimate AIR COMBAT EMULATOR.

ACE SCENARIO

A vast invasion fleet has landed on your southern shores and discharged scores of tanks supported by helicopter gun-ships and protected by mobile surface to air missiles. Squadrons of enemy fighters give the enemy forces air cover. Advancing ruthlessly they are conquering your homeland, facing no opposition.

You are the last fighter pilot with only three A.C.E. Mark 2.1 multi role All Weather All Terrain AWAT© combat aircraft. Based at an allied airbase, your task is to attack and destroy the numerically superior enemy land and air forces and drive them from your shores. The final stage of the conflict, having already destroyed the enemy land forces and shot down their air force, is to sink the enemy fleet as it evacuates its defeated army.

ACE – EXPERIENCE IT NOW

Every computer game fan will love ACE – just look at these features:-

- 100% optimized machine code uses all available memory.
- Featuring Dynamic Graphic Techniques (D.G.T.©)
- The smoothest, fastest and most detailed cockpit view of any flight simulation.
- Views of hills, trees, tanks and other ground objects. Aerial combat, ground attack and naval attack.
- **Synchro Speech**© ie. the speech does not freeze the action.
- Two seat option – fly and fight with the aid of a friend.
- Sensational 3D solid (not boring wireframed) graphics.
- High score saving system.
- AWAT© operation (All Weather All Terrain).

* Note due to memory limitations ACE on the C16 and VIC20 (+8K Ram) do not have any ground objects.

FREE 20 KEY MULTIFUNCTION CALCULATOR WATCH
• 12/24 Hour Time Mode • Alarm Mode
• Calendar Mode • Calculator Mode

Screen shots are for CBM 64 version. Other versions may vary.

ACE – EXPERIENCE IT NOW!

FREE!!!

Order ACE today and receive this fantastic
20 KEY MULTIFUNCTION CALCULATOR WATCH
ABSOLUTELY FREE!!!

PRICE **£10.95 (CBM 16 and VIC 20 £9.95)**
Postage FREE in U.K. Add £1 for overseas orders.
Allow 28 days for delivery.
I enclose cheque/postal order for (£.....) made payable to Cascade Games Ltd.
Or through any Post Office by Transcash (Giro No. 655 6655).
For even faster ordering when charging to Access, Barclaycard and Trustcard Visa use our 24 hr service (Tel. 0423 504663).

ENTER CREDIT CARD NO. IN BOX:-

VISA

☐ 64 ☐ 16 ☐ VIC 20 (with 8K RAM expansion)
☐ PLUS 4 ☐ 128
Special 64K version
Please tick box

NAME _____
ADDRESS _____
POSTCODE _____
COUNTRY _____

Please complete and send to:-
Cascade Games Ltd.
1-3 Haywra Crescent
Harrogate HG1 5BG. England.
Tel. (0423) 504663
Registered No. 1755554

cascade

CH1

Contents

FEBRUARY

GAMES

Soft Hits 15
Frantic fun with the cream of the arcade crop

Video Star 20
Spectacular graphics with Novagen's Mercenary

Tower of Adventure 23
Ken Matthews delves into more fantasy worlds

Acts of War 26
A look at military simulations on the 64

CREATIVE

FM Music 29
Turning your 64 into a professional synth

HARDWARE

Voice Module 29
Plug-in digital sounds from Music Sales

UTILITIES

Ski Writer 31
The full of fitness word processor from Mastertronic

PROGRAMMING

Programming the C128 35
A fast machine-code game you can enter in Basic

Space Snakes 38
A fast machine-code game you can enter in Basic

Software File 41
More programs from readers

REGULARS

Mail Merge 7
Your chance to let off steam and laugh with Fink

News 8
The latest from the computer marketplace

Tower of Adventure 10
Uppers, downers, and hanging-arounders

Minter Mania 18
Jeff reports from the mid-Atlantic

Networks 25
Which suits your needs — Compunet or Micronet?

Profile 32
Music wizard Rob Hubbard explains his tricks

Llamasoft Contest 45
Vic 20 owners — your chance to win Minter games!

Answer Back 55
Jack Cohen's latest batch of technical tips

WIN! Koronis Rift 58
The latest Activision/ Lucasfilm game for the 64

Editorial

THE HOME computer market is changing — some would say "maturing" — and the easiest way to assess the changes is to look at the products in the shops. Underpowered machines like MSX, Electron, and even the C16, are being "dumped" — sold at low prices to clear out stocks. While some of these represent worthwhile purchases, some, considering the lack of software and service support, will not be worth buying.

What we must now look forward to the age of bigger memory sizes, (128K and 256K minimum,) faster processors, and more powerful machines. Any industry which does not move on, stagnates.

That's why from next month you'll see changes in *Commodore Horizons*. No, we're not being forced to merge with the opposition, and no, we're not cutting down on our coverage of the 64, 128, C16, Plus/4 or Vic. What we're adding to the magazine is a section devoted to what should be the machine of the late eighties and nineties — the Commodore Amiga.

In next month's issue you'll get a free 16-page supplement which will give you a taste of what's to come. Get yourself ready for *Commodore Horizons and Amiga UK!*

Next Month

Amiga UK
A free 16-page supplement

Game Killer
Robtek's amazing cartridge

Plus
All the usual great features

EDITOR Christopher Jenkins **PRODUCTION EDITIOR** Barbora Hajek **EDITORIAL SECRETARY** Geraldine Smyth **ADVERTISMENT MANAGER** Simon Langston **MANAGING EDITOR** Brendon Gore **PUBLISHING DIRECTOR** Duncan Scot **TELEPHONE (ALL DEPTS)** 01-437 4343 **TELEX** 296275 SUNRGY **UK ADDRESS** Commodore Horizons, 12/13 Little Newport Street, London WC2H 7PP **US ADDRESS** Commodore Horizons, c/o Business Press Int'l, 205 East 42nd Street, New York, NY 10017 **SUBSCRIPTIONS** UK £10.00 for 12 issues, overseas surface (excluding US and Canada) £16.00 for 12 issues, US and Canada airlifted US$33.95 for 12 issues.

Commodore Horizons is published monthly by Scot Press Ltd. Typeset by In-Step Ltd, 33-41 Dallington Street, London EC1. Printed by Greenaway Harrison Ltd, Southend-on-Sea, Essex. Distributed by SM Distribution, 16-18 Trinity Gardens, London SW9, telephone 01-274 8611, telex 261643.

©Sunshine Books 1985

ABC

SUBMITTING ARTICLES *Commodore Horizons* invites readers' contributions, either program listings or articles. Articles should be typed, double spaced with a wide margin. When possible programs should be submitted on cassette or disk with a printout on plain white paper. Please keep a copy of your submission — do not send your only copy. Please enclose an s.a.e. if you wish your submission to be returned. All submissions must be your own original work.

Compumart Mega Deals

Best Prices for BLANK DISKS in the UK.

Top Quality 5¼" Bulk Packed Disks
(Hub-Ringed and in White Envelopes with a Lifetime Warranty)

FREE!!! Plastic Library Case worth £2 when you buy 10 Disks

FREE!!! Perspex Disk Storage Box worth £10 when you buy 50 Disks

10 – 5¼" SINGLE SIDED/DOUBLE DENSITY BLANK DISKS (with FREE case)	£9.95	+ £1 p&p
10 – 5¼" DOUBLE SIDED/DOUBLE DENSITY BLANK DISKS (with FREE case)	£13.95	+ £1 p&p
50 – 5¼" SINGLE SIDED/DOUBLE DENSITY BLANK DISKS (with FREE Storage Box)	£49.95	+ £2 p&p
50 – 5¼" DOUBLE SIDED/DOUBLE DENSITY BLANK DISKS (with FREE Storage Box)	£69.95	+ £2 p&p

GOODS DESPATCHED: Same day 1st Class Post
MONEY BACK GUARANTEE: If you are not completely satisfied with your purchase we will either exchange your disks or give a FULL REFUND – that's the Compumart Guarantee.

Access VISA

Please send cheques/postal orders to:
Compumart, (Dept CH)
71 Gracedieu Road, Loughborough
Leics. LE11 0QF Tel (0509) 262259

...Compumart....Comp
0509-262259
TLINE.....HOTLINE.....HO

Mail Merge

Send your letters on software, hardware, computing or life in general to Mail Merge, Commodore Horizons, 12/13 Little Newport St., London WC2H 7PP.

Protocol problem

COULD YOU ask your readers if they have played **The Fourth Protocol**? I have tried and tried with the game, but furthest I could get is to the 25th of July, when I am sent to the Falkland Islands. So if anyone could offer any help I would be grateful!
Paul Templeton
Elgin
Moray

C16 on the shelf

THERE ARE several points I would like to raise about the Commodore C16.

The user guide mentions the monitor but no real instructions on how to use it. I was wondering if your magazine has given any detailed descriptions on how to use this command.

Are there any software companies planning to release a version of Pascal which will run on this machine when expanded to 64K?

The third point is, is your magazine planning in the near future to give a listing of a basic compiler? Do any of the software houses supply one?

Finally, could you supply details of any company which would supply dust covers for the following pieces of Commodore equipment: C16, 1531 Datasette, 1541 Disc Drive, MPS 803 Printer.
John R. Willoughby
Coventry

BRIAN LLOYD'S book *The C16-Plus/4 Companion*, published by ourselves at £5.95 plus 50p p&p, contains a short introduction to using the monitor. A complete explanation of machine code would fill a whole book, and indeed there are many such books available, though none dedicated to the C16.

There's no chance of any company producing Pascal for a 16K machine; the number of people with 64K expansion memories must be minute, so it wouldn't be financially viable. Nor have we heard of a Basic compiler, though that may come.

For dust covers and such like, try Commodore's own Vicsoft service, at 1 Hunter's Road, Weldon North Industrial Estate, Corby, Northants, 0536-205555.

80-col on 128

I WOULD like to buy a C128, which seems to offer a good combination of facilities for games and business.

However, part of the attraction is the 80-column screen display, which will be an improvement over the 40-column display of my 64. But since I already own an RGB monitor with 80-column capability, I don't want to spend £300-plus on the new Commodore 1901 RGBI monitor just to get the 80-column display in 128 and CP/M mode. What can I do to get 80-column without buying the new monitor?
Jack Trent
Manchester

GOOD NEWS — two companies are to manufacture interface cables which will allow you to use the 1701 monitor, and many other types, in 80-column mode on the 128. Contact Robcom, on 01-209 0118; or Trilogic, on 0274-685926. Reviews forthcoming.

Artist query

I HAVE just finished typing in Frank Bingley's Artist 2000 program from December issue, and I have had great difficulty getting my disk to co-operate! Could you check the program to see if there has been any omission or misprint?
K J Jones
Gosport

WE CAN'T spot anything, and as usual we were very careful in preparing the listing; Frank's program came in on cassette and was checked out and listed direct from the 64. Has anyone else had any problems? If so, drop us a line — please don't phone, we're busy enough as it is! — and we'll try to sort things out.

CP/M a no-go?

WHERE, oh where, is the software promised for the Commodore 128?

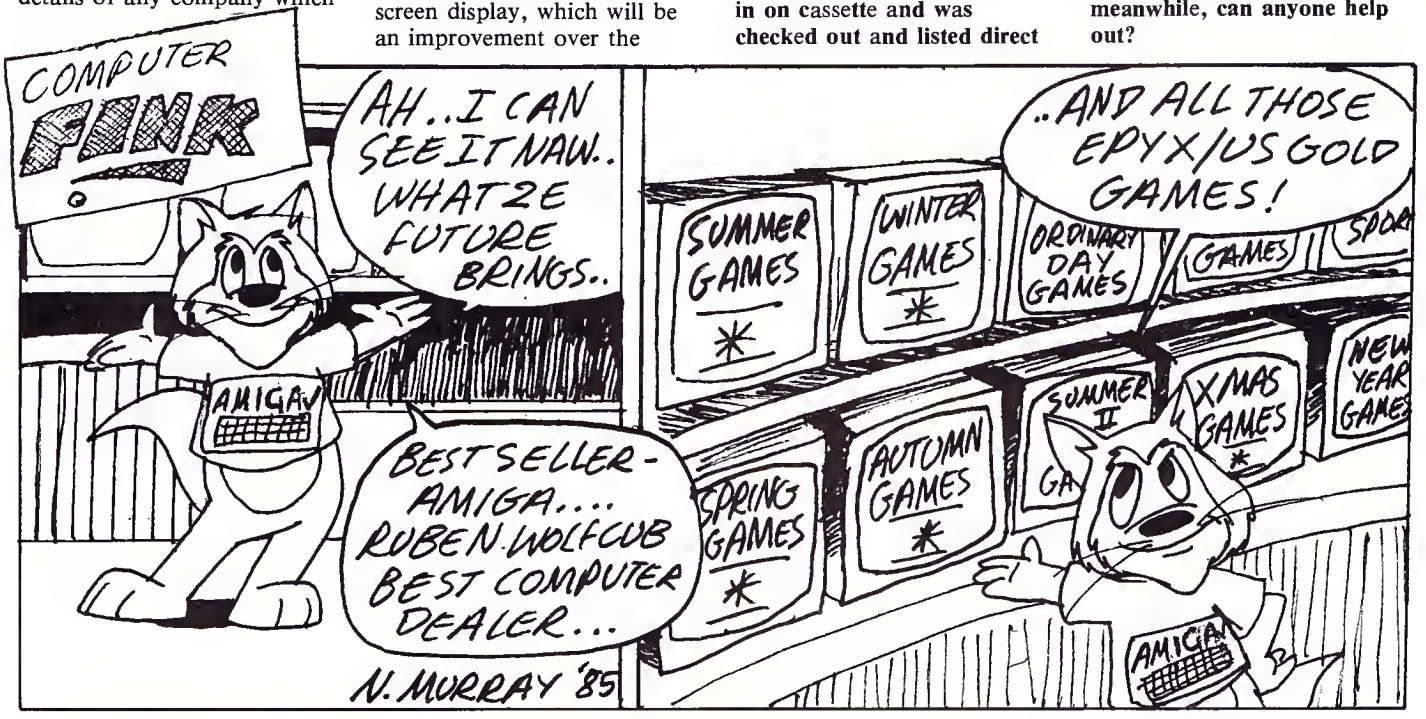
Most of the software advertised has a 64/128 label, which does nothing for the 128 or CP/M mode.

Regarding the CP/M mode, nobody seems to know exactly what format you need to run software on the C128.

After contacting Commodore, they don't seem to know the answer. Even after purchasing the CP/M Plus Users Guide for £24.95 and Commodore's suggestion to join CP/M Users Group (UK) for which the fee was £7.50, there still seems to be no concrete answer.

CP/M Users Group say that they cannot supply non-standards formats which include Commodore. So I do not know where to go from here.
Terence A. Motley
Braintree
Essex

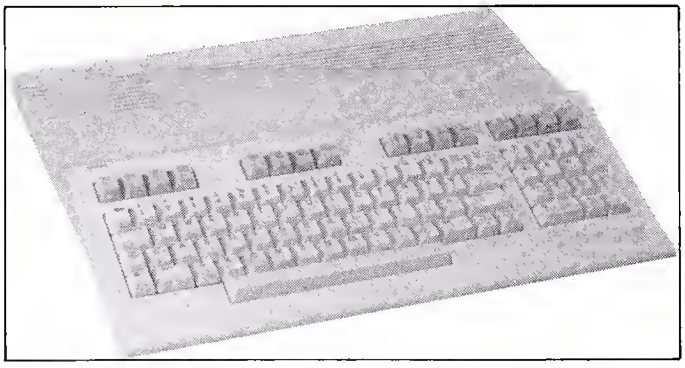
WE'LL BE running a feature on 128 CP/M shortly — meanwhile, can anyone help out?



64 trade-in to boost 128

COMMODORE'S latest plan to boost sales of the C128 involves trading in your tired old computers.

Available through all major retailers and independent dealers, the offer entitles existing Commodore 64 owners to a £50 discount on the normal £269 price of the C128 when they trade in their old computer. Owners of any other computer will receive a free datasette, worth £45, when they trade in their machine.



Commodore marketing manager Chris Kaday explained that the offer was meant to appeal to present owners of 64's and other machines who want to upgrade to the 128K system, which can use powerful CP/M programs.

As to what will happen to the trade-in micros, a Commodore spokesman would only comment: "There are a number of options open to us, but at the moment I'm not in a position to say what will happen".

The trade-in offer closes on January 31st, indicating that Commodore's main hope is that sales of the C128 in the Christmas period will outshine those of rival manufacturers' machines, setting Commodore up for a year in which the C128 and the Amiga will dominate the market.

High Street retailers denied Amigas

COMMODORE'S 68000-based Amiga computer will be sold exclusively through specialist retailers, it was revealed at a recent press conference.

Gail Wellington of Commodore Electronics commented "We believe that we have the most exciting computer any specialist store can deal in; we are not about to let it fail through falling between two posts *(as a business machine or a home machine)* and we do not believe that high street stores have sufficient experience to demonstrate the machine effectively."

Plans to sell the basic system at around £1000 will be affected by the state of the market and the dollar rate at the time of the launch. At the moment Commodore anticipate American NTSC versions to be available in Europe in March '86, UK PAL samples available at the same time, and full production of PAL models to be underway by June.

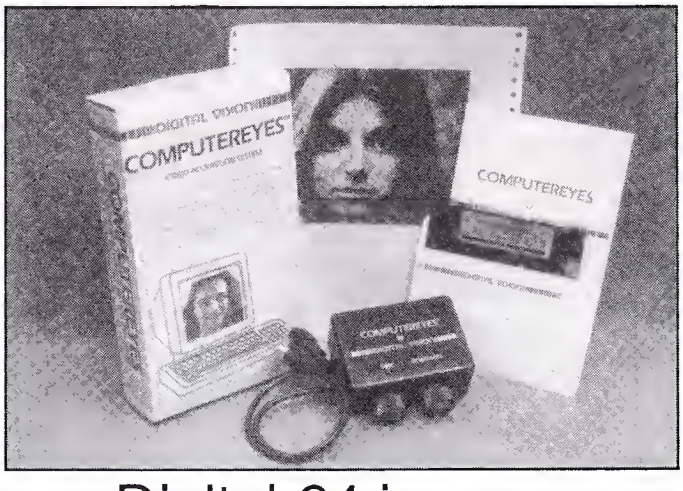
In the States, the peripherals hoped to be available at the date of the UK launch are already on sale; the monitor at $500, 512K memory expansion at $200, 3½ inch disk drive at $300, and 5¼ inch disk drive at $400. Low-end software packages such as Textcraft, GraphicCraft and MusicCraft are selling at around $79, and high-end packages like Deluxe Paint at $129. Plans for UK software are progressing, with around 80 Amigas in the hands of developers, but at the moment most are keeping a low profile.

"Lord" is delayed

MELBOURNE HOUSE'S **Lord of the Rings, Part One**, will now be available for the Commodore 64 early in the New Year.

Already released on the Sinclair Spectrum, the long-awaited follow-up to **The Hobbit** features recognition of sentences up to 128 characters long, full interaction between characters, 800 word vocabulary, over 200 locations, and a choice of characters to play. One of the programs included is a simple introductory version for players who have not encountered adventure games before, and the complete package contains a copy of the paperback *The Fellowship of the Ring*, a user guide, and two cassettes.

The price of the Commodore 64 version is £15.95, with the forthcoming disk at £19.95. Contact Melbourne House, Castle Yard House, Castle Yard, Richmond TW10 6TF, 01-940 6064, for more details.



Digital 64 images

THE COMPUTEREYES video digitiser, first seen in the UK at the Commodore Show in June, is now available through Stem Computing. The hardware device connects your computer to any standard video camera or recorder, and produces black and white scanned images on the computer display.

Computereyes supports pattern recognition, art and spatial measurement functions, and can produce hi-res screen dumps.

Contact Stem Computing, 3 Blackness Ave, Dundee, 0382-65113.

Plus/4 patterns

DISAPPOINTED by the lack of software for the Plus/4, industrial desinger Ken Blake has written his own graphics program, **Pattern Designer**. In conjunction with an Oldham school, Ken wrote the program in order to make better use of the Plus/4's powerful graphics capabilities. The menu-driven package includes such facilities as free-hand drawing, joining points, polygons, fill, block, clear, screen flip, mirror, zoom, rotate, screen swap and copy, disk load and save, and full use of the Plus/4's 121 colours.

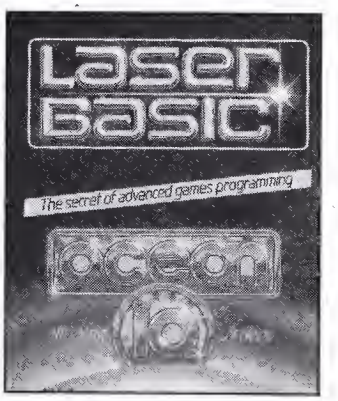
The program is almost totally joystick controlled, and Ken is making it available at £10. If you're interested, contact him at 25 Cornhill Crescent, North Shields, Tyne and Wear NE29 8LN.

Ocean enters utility field with Laser

OCEAN'S first utility program for the 64, *Laser Basic*, is now available. An advanced programming utility designed for games creation, Laser Basic costs £14.95 on cassette or £19.95 on disk.

The package allows the user to use 250 extra commands, an extended interpreter, a sprite and graphic designer and two sets of predefined sprites.

Up to 255 sprites can be defined, each up to 255 by 255 characters in size. Additionally, scrolling, enlargement, rotation and inversion of sprites and screen windows is possible. Sound handling, concurrent operations and procedures with local variables and full parameter passing are also possible. Developed by Oasis Software, the company behind the White Lightning series, Laser Basic



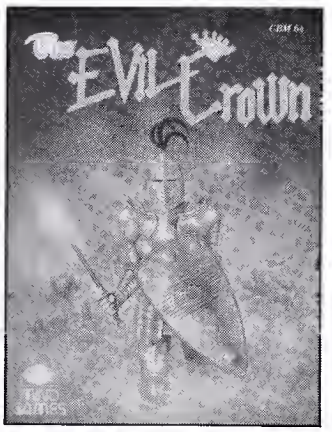
will eventually be accompanied by a compiler package which will allow you to produce free-running machine code from ordinary Basic or Laser Basic files.

Review next issue: meanwhile contact Ocean, 6 Central Street, Manchester M2 5NS, 061-832 6633.

Ariola's Western

ARIOLASOFT'S latest game release for the 64 is neither an adventure game nor an arcade game. **Wild West** is a bit of both; a menu-driven graphic action adventure which features animated sections, as well as more familiar puzzles to solve.

Costing £12.95 on disk, with the £9.95 cassette version to follow, Wild West casts you as a cowboy hero trying to save a fort captured by outlaws. On the way you'll encounter bank robberies, gunfights, rodeos and rattlesnakes. Alternative actions are selected from a menu using the joystick, and to help or hinder you along your path there are two "sprites" who pop up to offer advice. For more details contact Ariolasoft, Suite 105/6, Asphalte House, Palace Street, London SW1, 01-834 8507.



Crowned

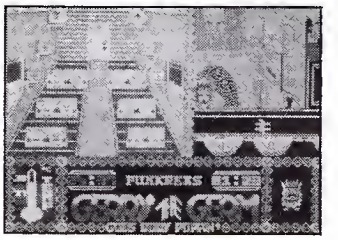
THE LATEST software release from Argus Press is *The Evil Crown*. Set in feudal England in the year 1200, it places you in the position of an ambitious baron making a bid for the crown. The program is fully icon-driven. The highly graphic simulation includes routines in which you hire militia, repress the peasants, amass treasure and finally take on the king in a jousting contest. The rewards for success are enormous, and for failure there is only one possible penalty!

For more information on The Evil Crown, which costs £9.99, contact Argus Press Software, Liberty House, 222 Regent Street, London W1, 01-734 6470.

Hot range coming from Firebird

THE LATEST range of games from British Telecom's software house Firebird departs from tradition in being full price, at £7.95 per game. But as you'd expect the quality is even higher than that of the popular Super Silver range.

Titles for the 64, available shortly, include **Rasputin**, an Ultimate-style animated arcade adventure; **Costa Capers**, a platform-and-ladders epic set in a holiday resort; **Runestone**, a



sophisticated graphic adventure; and **Gerry the Germ**, an arcade game featuring Rob Hubbard music. Contact Firebird on 01-379 6755.

Robcom cleans up

THE LATEST aid to Commodore computer system maintenance is from Robcom, the Turbo cartridge people. Their Alignment system works with the C16-Plus/4, 64, 128 and Vic 20.

The kit consists of two cassettes, a head cleaner and an alignment program, plus a miniature screwdriver. The routines contain a reference signal which produces a pattern of moving lines on the computer display.

Cost is only £4.95; contact Robcom, 36 Market Place, London NW11, 01-209 0118, for details.

MAKE MONEY WITH YOUR MICRO!

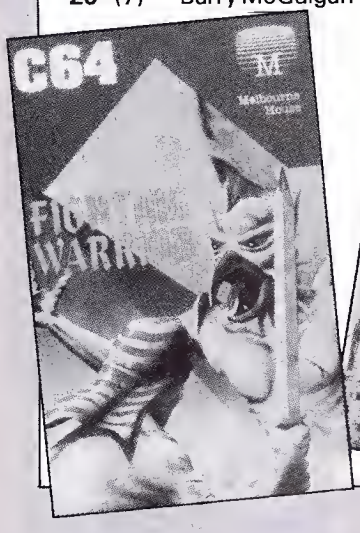
you could earn over £50 per week-in your spare time-and you don't need any special programming skills...

Send 17p stamp for details to: MICRO ENTERPRISE CLUB, P.W.PROMOTIONS.P.O.BOX 21, MANCHESTER M16 8EA.

Charts

Top Twenty CBM 64 Games

1	(NE)	Winter Games	US Gold	£9.95
2	(NE)	Monty On The Run	Gremlin Graphics	£8.95
3	(5)	Who Dares Wins 2	Alligata	£7.95
4	(3)	Summer Games 2	Epyx/US Gold	£9.95
5	(NE)	Last V8	Mastertronic	£1.95
6	(NE)	Fighting Warrior	Melbourne House	£8.95
7	(NE)	Racing Destruction Set	Ariolosoft	£12.95
8	(17)	Action Biker	Mastertronic	£1.99
9	(4)	Way Of The Exploding Fist	Melbourne House	£9.95
10	(NE)	Rambu	Ocean	£8.95
11	(NE)	Fight Night	US Gold	£9.95
12	(15)	Kik Start	Mastertronic	£1.99
13	(9)	Beach Head 2	Access/US Gold	£9.95
14	(NE)	Commando	Elite	£9.95
15	(NE)	Computer Hits (10)	Beau Jolly	£9.95
16	(19)	Elite	Firebird	£14.95
17	(6)	Sky Fox	Ariolasoft	£9.95
18	(NE)	They Sold A Million	Hit Squad	£9.95
19	(20)	Finders Keepers	Mastertronic	£1.99
20	(7)	Barry McGuigan's Boxing	Activision	£8.95



Bubblers

1	Arcade Hall of Fame	US Gold	£9.95
2	Little Computer People	Activision	£9.95
3	Battle Of Britain	PSS	£9.95
4	Imhotep	Ultimate	£9.95
5	Scarabaeus	Ariolasoft	£9.95
6	Robin Of The Wood	Odin	£8.95
7	Thunderbirds	Firebird	£3.95
8	Super Zaxxon	US Gold	£9.95
9	Kennedy Approach	Microprose/US Gold	£9.95
10	Scalextric	Leisure Genius	£9.95

Top Three CBM 64 'Non-games'

1	Mini Office	Database	£5.95
2	Music Studio	Activision	£12.95
3	Azimuth 2000	Interceptor	£8.99

Top Five C16 Games

1	(1)	Formula One Simulator	Mastertronic	£1.99
2	(3)	BMX Racers	Mastertronic	£1.99
3	(4)	Squirm	Mastertronic	£1.99
4	(2)	Daley Thompson's Star Event	Ocean	£6.95
5	(5)	Spectipede	Mastertronic	£1.99

Bubblers

1	Vegas Jackpot	Mastertronic	£1.99
2	Tutti Frutti	Mastertronic	£1.99
2	Air Wolf	Elite	£6.95

Top Five Vic 20 Games

1	(1)	Crazy Cavey	Mastertronic	£1.99
2	(1)	King Tut	Mastertronic	£1.99
3	(4)	Rockman	Mastertronic	£1.99
4	(NE)	Doodlebug	Mastertronic	£1.99
5	(NE)	Rip The Game	Mastertronic	£1.99

Bubblers

1	Psycho Shopper	Mastertronic	£1.99
2	Bullet	Mastertronic	£1.99
3	Neutron Zapper	Mastertronic	£1.99

Data compiled by Gallup from a panel of specialist and chain stores, for the month ending November 22nd.

ROCK YOUR MICRO

THE ADVANCED MUSIC SYSTEM
Disc £39.95
"The package looks spectacular and the end results are equally impressive." (Commodore User)

THE MUSIC SYSTEM TAPE
£14.95 Disc £17.95
"Quite simply, the best piece of 64 music software yet" (Commodore Horizons.)

MAKE YOUR COMMODORE THE HEART OF A MODERN DIGITAL RECORDING STUDIO WITH 'THE MUSIC SYSTEM' – OR EXPLORE THE WORLD OF MULTI-TRACK SEQUENCING, MIDI AND LIVE PERFORMANCE WITH 'THE ADVANCED MUSIC SYSTEM'. THE CHOICE IS YOURS.

ALL THESE FEATURES ARE NOW AT YOUR COMMAND

EDITOR

Compose, edit and rearrange your music with minimum effort using sophisticated commands and pull down menus.

KEYBOARD

Use your Commodore keyboard to enter and correct music with the cassette recorder style multi-tracking functions.

SYNTHESISER

This sound editing module contains custom designed software which extends the range of the sound chip. Creating and modifying sounds with the sequencer allows you to 'sound-scape' and mix in real-time.

PRINTER (ADVANCED VERSION ONLY)

Print out individual music files or completed works with lyrics to add to your portfolio. Compatible with Centronics and Commodore printers.

M.I.D.I (ADVANCED VERSION ONLY)

Create, store or play back original music on your own MIDI keyboard then use the Editor and Synthesiser modules for step-time editing and sound shaping. Compatible with Siel, Passport and JMS interfaces. Works with most Casio, Korg, Roland and Yamaha MIDI Keyboards.

LINKER (ADVANCED VERSION ONLY)

Enables files from the Editor to be chained together in any order to produce full-length compositions.

OTHER FEATURES INCLUDE:

* Real-Time sequencer (4000 note capacity)
* Multi-Track and Overdub facilities.
* 30 Preset sounds
* Sample Music Files
* Save to tape or Disk
* Professional Manual
* Upgrade offer (TMS to AMS)

RAINBIRD IS A DIVISION OF BRITISH TELECOMMUNICATIONS PLC.

RAINBIRD SOFTWARE BRITISH TELECOM WELLINGTON HOUSE
UPPER ST MARTIN'S LANE LONDON WC2H 9DL TEL: 01-240-8838
BARCLAYCARD AND ACCESS ORDERS TEL: 01-240-8837 (24 HOURS)
MAIL ORDER: SEND CHEQUE OR P.O.
MADE PAYABLE TO RAINBIRD SOFTWARE.
TMS FOR THE BBC MODEL B
AVAILABLE FROM:
SYSTEM SOFTWARE LTD,
12 COLLEGIATE CRESCENT,
SHEFFIELD S10 2BA.

UNITSOFT DISTRIBUTION

ALL GAMES GUARANTEED IN STOCK

5% DISCOUNT & FREE SECURICOR DELIVERY ON ORDERS OVER £40.

NOW! EASY ORDERING WITH OUR NEW FREEPOST ADDRESS.

COMMODORE		TICK
Winter Games	7.50	
Elite	11.20	
Monty on the Run	7.50	
Fighting Warrior	6.70	
Scarabaeus	7.50	
Robin of the Woods	7.50	
Blackwyche	7.50	
Donald Duck	7.50	
Summer Games II	7.50	
Big Mouth (Speech)	5.95	
Pitstop II	7.50	
Impossible Mission	7.50	
Kennedy Approach	11.20	
Super Zaxxon	7.50	
Encounter	7.50	
William Wobbler	7.50	
Terrormolinos	5.95	
Worm in Paradise	7.50	
Harvey Smith	5.95	
Beach Head II	7.50	
Exploding Fist	7.50	
Sky Fox	7.50	
Karateka	7.50	
Mindshadow	7.50	
Sabre Wolf	7.50	
Underworlde	7.50	
Thing on a Spring	5.95	
Music Construction Set	8.25	

COMMODORE		TICK
Commando	6.70	
Rambo	6.70	
Fight Night	7.50	
Little Computer People	7.50	
Young Ones	5.95	
Zorro	7.50	
Skool Daze	6.25	
Outlaws	7.50	
Goonies	7.50	
Yabba Dabba Doo	5.95	
Mercenary	7.50	
Blade Runner	6.70	
Revs	7.50	
Enigma Force	7.50	
Ball Blazer	7.50	
Arc of Yesod	6.70	
Gyroscope	6.70	
Crazy Comets	5.95	
Transformers	6.70	
Quake One	7.45	
Friday 13th	6.70	
Neverending Story	7.50	
Superman	7.50	
Wild West	7.50	
Starion	7.50	
Hall of Fame	7.50	
Deathwake	5.95	
Scalectrix	5.95	

DISCS		TICK
Rambo	11.20	
Fight Night	11.20	
L.C.P.	11.20	
Goonies	11.20	
Zorro	11.20	
Mercenary	9.70	
Revs	13.45	
Gyroscope	11.20	
Wild West	11.20	
Starion	11.20	
Wizardry	11.20	
Gt. Boat Race	11.20	
Sky Fox	11.20	
Scarabaeus	11.20	
Pitstop II	11.20	
Summer Games	11.20	
Summer Games II	11.20	
Winter Games	11.20	
Impossible Mission	11.20	
Monty on the Run	11.20	
Fighting Warrior	11.20	
Exploding Fist	11.20	
Elite	13.45	
Wizard	11.20	
Super Zaxxon	11.20	
Peripherals		
1. Datex Micro Stick	10.95	
2. Quick Shot II	6.25	

NO STAMP REQUIRED *

NAME

ADDRESS

POSTCODE

TELEPHONE

* UK ONLY

Send order to:

UNITSOFT, FREEPOST, GLASGOW G1 4BRC.

COMMODORE & AMIGA

HORIZONS

UK

FREE in next month's great issue

AMIGA 16-page supplement

A NEW CLASSIC

FROM PAUL WOAKES
AUTHOR OF ENCOUNTER!

YOU CHOOSE THE ACTION IN MERCENARY

Mercenary – a unique combination of flight simulation, adventure and arcade fun. You choose the action.

There is complete freedom of movement in a truly three-dimensional vector-graphic environment. Graphics of exceptional speed create a very realistic experience.

You'll never play the same game twice. Random elements attempt to seal your fate. Your interaction is crucial.

Mercenary presents an absorbing challenge that you will accept again and again.

MERCENARY
ESCAPE FROM TARG

Fly above the planet Targ in a variety of craft. Investigate the multitude of structures on the planet surface in your quest for essential supplies. Search the mysterious subterranean complex in pursuit of your fortune.

Become embroiled in the continuing conflict between the Palyars and Mechanoids. Accept their paid assignments or work independently to gain wealth.

You only have one true friend – the ever-reliable Benson, an almost human PC, who guides you in your travels.

Pursue your objective as you will : To succeed you have to escape from Targ.

INITIAL RELEASE
FOR COMMODORE 64 ATARI 48K 800 XL 130 HE
CASSETTE £9.95 DISK £12.95

NOVAGEN

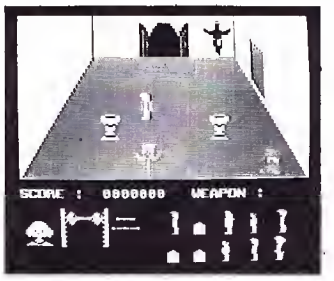
NOVAGEN SOFTWARE LTD: SALES 142 ALCESTER ROAD BIRMINGHAM B13 8HS

SOFT★HITS

Slasher

If **Rambo** is the acceptable face of film/game tie ins, then **Friday 13th** from Domark must be the inevitable flipside. **Friday**...the game is based on the slash cycle of movies about weirdboy Jason down at dodgey resort Crystal Lake, and the game echoes the film's gory approach with a cover shot of Jason's famous hockey mask, theough Domark are keen to point out that the game isn't a "computer nasty" (in which case, what's the point?).

When the game begins you find yourself playing one of 10



characters, drawn from the film. A random choice, it changes every game, as does the identity of Jason, who is masquerading as one of the other characters. Your task is to locate the Sanctuary Cross (which repels Jason), and lead the other characters to it. Should you encounter Jason yourself, you may avail yourself of one of the weapons lying about the place to defend yourself.

The action is set in a 7 × 5 screen landscape, containing a 3-room church, a house, a barn, and so on. One nice touch is that each location causes an appropriate tune to be played — The **Teddy Bear's Picnic**, in the wood for example. If Jason kills another character — which happens fairly frequently — a blood-curdling scream is heard, and the characters 'icon' at the bottom of the screen turns into a tomb stone. Graphics are fair, but *involvement* (which after all is the point of a game like this) is sadly lacking.

Program: Friday the 13th, 64
Supplier: Domark
Price: £7.95
Graphics: ★★★★★
Sonics: ★★★★★
Gameplay: ★★★★★

Bananas

Play the game that took 35 million years to create' boasts the inlay. Well, Mastertronic's **Human Race** should help you pass more than a few idle hours.

What you have to do is evolve: you begin as an ape-like character clambering around a woody jungle setting attempting to collect bananas whilst fending off the unwanted attentions of stegosaurs, pterodactyls, giant gnats and the like.

Succeed on this 'platform and ladder' style screen, and a slightly more evolved ancestor of homo sap gets to try his luck crossing causeways apparently constructed from a variety of conveyor belts — only quick reactions and a bit of thought'll save you from sudden death.

Further screens feature even more diverse challenges, all set to the accompaniment of another very good Rob Hubbard soundtrack, as our hero clambers up the evolutionary ladder, encountering challenges in fields, factories, and finally a computer age city in his search for sapience. (I must confess it's not a goal I've reached myself yet).

Graphics throughout are bold and colourful, and the problems diverse enough to keep you on your toes. (Though once you've 'solved' each screen, its appeal is somewhat lessened.) Neat touches abound, the animated face of Fate which appears when you lose your third — and final — life; the background jungle noises on the first screen, to name but two...Yet, Mastertronic has done it again. A bargain-priced goodie.

Program: The Human Race, 64
Supplier: Mastertronic
Price: £1.99
Graphics: ★★★★★★★★
Sonics: ★★★★★★★★
Gameplay: ★★★★★★★★

Alienated

Chimera, on Firebird's Super Silver budget label, marks another collaboration between music whizz Rob Hubbard, and one of his favourite programmers, Shahid Ahmad. The game impresses immediately, opening with a burst of digitised speech intoning 'Chimera' in suitably doom-laden tones, but as play begins, a certain sense of deja vu descends.

The scenario alone may ring a few bells: your space-suited hero has been sent aboard a mysterious space ship, with orders to locate and initiate its self-destruct mechanisms before it has time to drop a big one on Earth. To complete this talks you will have to explore the many maze-like rooms of the ship, find a variety of artifacts, and work out how to use them while simultaneously keeping an eye on your food and water situation.

Yes folks — what we have here is an Alien-8 clone, right down to the peculiar blocky, 3D room graphics (found also on **Knightlore**.) The one significant difference, however, is that unlike Alien-8 or Knightlore, your hero (looking, in his large, cubic space-suit more robot than human cannot manipulate any of the room-blocks in order to reach his objectives — a significant part of the gameplay of the afore-mentioned games and sadly missed.

Nevertheless, it's an entertaining romp.

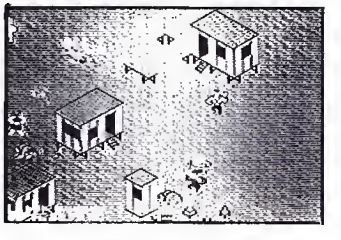
Program: Chimera, 64
Supplier: Firebird
Price: £3.50
Graphics: ★★★★★★
Sonics: ★★★★★★
Gameplay: ★★★★★★

Durrr . . .

Ocean's officially-licensed game of box office hit Rambo falls into the same category as **Who Dares Wins** and **Commando**; leaden-death-splitting supersoldier battling his way through batallions of helpless cannonfodder. To their credit, Ocean has introduced a few subtleties; a number of objectives, such as releasing a comrade, locating the helicopter, returning to the POW camp to free the other prisoners; and a selection of weapons, including knife, arrows, rocket launcher and machine gun.

The maze-like jungle adds another dimension, though you can blast you way through it if you're not afraid to alert the enemy.

The graphics and animation, especially of muscle-bound Rambo himself, are pretty good, and, although the music isn't by



Rob Hubbard, it might as well be — pitch bends, searing lead lines and all. You can switch it off if you want to concentrate on the explosive sound FX, though.

Rambo certainly lives up to its hype, and adds an element of strategy and forward planning to the Commando-type genre.

Program: Rambo, 64
Supplier: Ocean
Price: £7.95
Graphics: ★★★★★★★
Sonics: ★★★★★★★★
Gameplay: ★★★★★★★★

SOFT★HITS

Into gear

Good games for the C16 are few and far between. But Mastertronic's **Formula 1 Simulator** is the exception that proves the rule. Using the by now familiar cockpit point of view, this particular variation on the classic **Pole Position** features smoothly — scrolling, varied backdrops (countryside, cities, etcetera), other cars, and a fiendishly devious circuit, marked out by parallel rows of 'roadside markers'. Sound

effects are few, but passing another car elicits a nice "EE-ow!', and crashing (which terminates your go) is suitably cataclysmic.

The cars are nicely drawn, large, colourful, and rather cartoon like, with overall realism enhanced by the presence of a steering wheel on the lower half of the screen, which also features hi score, speed, number of laps completed, and so on. The better you hold your car on course (no easy matter on the numerous tight corners), the faster you will go. An additional level of control is provided in the provision of Hi and Lo gears, which can be toggled using the joystick fire button.

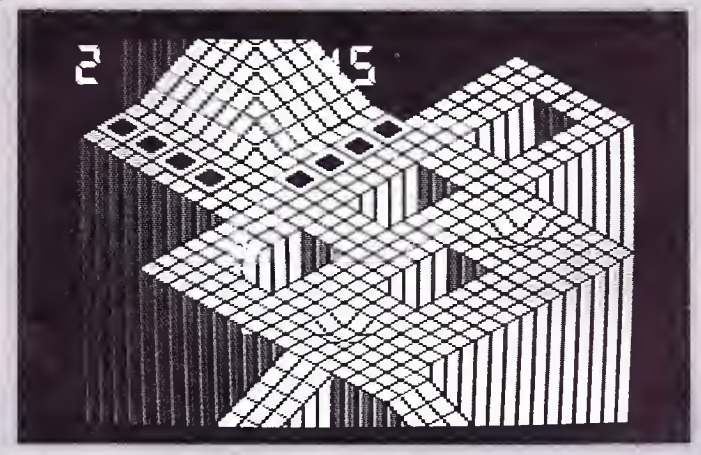
I have seen worse racing games on more sophisticated machines, at five times the price. If you have a C16, you *must* have this game.

Program: Formula 1 Simulator
Supplier: Mastertronic
Price: £1.99
Graphics: ★★★★★★★★
Sonics: ★★★★★★★
Gameplay: ★★★★★★★★

You spin me around

Melbourne's latest arcade effort is based very closely on a hugely popular cabinet game, the name of which Melbourne do not like to hear mentioned (but it's **Marble Madness**).

As in the original, your task is to pilot a weird object (in this case a spinning gyroscope) along a course of ramps, gullys, planes and dips as quickly as possible. The whole lanscape is presented with a clever three-d effect, and the effect of inertia,



gravity and velocity are very cleverly programmed.

As you teeter around the course, your gyroscope is threatened by areas of sudden inertia, roaming saw blades, strange blobs and other menaces. Keeping an eye on the timer, you must race through the obstacles before your life ebbs away.

Gyroscope is very good, although Melbourne House cannot take credit for inventing the game. Music is unexceptional, and there's a tedious wait in between runs as you bonus is calculated; but other than that I would have though this one would make a very pleasant alternative to all the current sports simulations and Commando-clones

Program: Gyroscope, 64
Supplier: Melbourne House
Price: £8.95
Graphics: ★★★★★★★
Sonics: ★★★★
Gameplay: ★★★★★★★★

Oh, shut up, Neil

Orpheus's Young Ones has a lot to live up to. Almost everyone in the country is familiar with the quartet of obnoxious eternal students portrayed in Ben Elton's anarchy TV show — so can any computer game based on their exploits match its appeal? On the evidence of this pre-production version it's hard to say.

Having chosen which of the four characters you wish to be, your objective is to move around the house, collecting together certain items which belong to you, so that you can move out of the house, and win the game. Simple? No. To begin with, you don't know which items are important do you. (Is it the H-bomb? The Cliff Richard Album?). Secondly, the other characters are all busy doing their own thing, inna **Hobbit** stylee, and may hamper or help your quest, depending on how you interact with them.

Unlike the Hobbit, however, the screen display here is animated, split into two, to show both the room you character is in, and the room where 'the most interesting thing is happening' — Vyvyan attacking Neil with a sledgehammer, perhaps. Your participation in the action is via menus of options (Take, Walk, Talk etcetera) which in turn give way

to sub menus (Talk to Neil about the Lentils...). The other characters' responses to you, and indeed to each other, take the form of comic-style 'speech bubbles', which ofted contain clues about objects, or motivations.

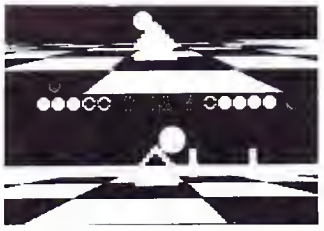
This preview copy demonstrated no evidence of the intelligent interaction promised (the more appropriate your actions are to your character, the better you are supposed to do), and all the to-ing and fro-ing lost me. A game which will take time to get into. I think. For the moment, I'll give it the benefit of the doubt, and wait for the final version.

Program: The Young Ones, 64
Supplier: Orpheus
Price: £9.95
Graphics: ★★★★★★★★
Sonics: ★★★★★★★
Gameplay: ?

Future football?

The second of the Lucasfilm games from Activision, **Ballblazer** sets new standards for speedy 3-D perspective graphics. Like many American games, though, the initial thrill might pall if you like an intellectual challenge in your games.

The screen is divided into two; each half shows the view from the cabin of a strange wedge-shaped craft. These craft



zip (under joystick control) over a chess-board like grid, fighting for possession of a ball of energy. Catch it in your sensor field, then dash for the goal-posts and ram it home before you're tackled by the opposition.

Since the craft is automatically aimed towards the ball, and then towards the goal, there doesn't seem to be much skill involved. Still, you can practice bouncing your opponent around the game grid if you prefer, try those tricky over-the-horizon shots, or just watch the pretty demos.

Ballblazer, like IJK's **Rocket Ball**, is a clever idea because it takes the current fad for sports games and turns it on its head by inventing a new sport rather than slavishly imitating an existing one. More please!

Program: Ballblazer, 64
Supplier: Activision
Price: £9.99
Graphics: ★★★★★★★★
Sonics: ★★★★★
Gameplay: ★★★★★★★

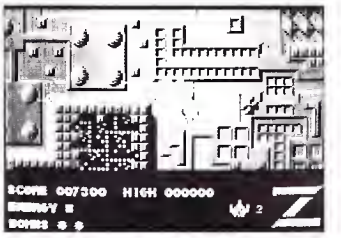
SOFT★HITS

Z is for zap

Any game which boldly states its aim is to 'destroy all attacking aliens' can't be all bad: no wimpy liberal justifications, no tedious scene-setting: just a heads down, no nonsense shoot-'em-up. When the game — **Z**, from new software house Rino — also boasts some pretty superb bas-relief graphics *and* perfect fast scrolling in eight direction, then there is cause for celebration indeed.

Z opens with your ship hovering over an endless expanse of techno-city, and immediately beset by a pleasingly diverse range of alien spaceships, missiles, and sundry nasties.

From the word go, the action is frenetic. After every tenth 'standard' alien has been destroyed by your lasers (an autofire joystick is a help), an 'energy unit' will appear. Destroy that in turn, and an energy bomb will be released, which you can collect by flying over it before it 'decays' and



vanishes. These bombs may then be fired (by pressing the space bar) at the rotating green fences which guard the Transporter Unit. Punch enough holes in the fence, and you can enter the Transporter, and warp to the next sector, a beautifully detailed countryside backdrop, with, yes, you've guessed it, more and meaner nasties...

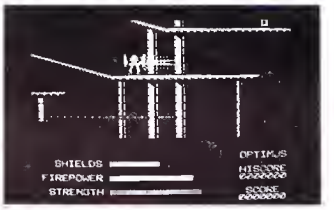
An excellent blast from the author of **Hypercircuit.**

Program: Z, 64
Supplier: Rino
Price: £8.95
Graphics: ★★★★★★★★★
Sonics: ★★★★★★
Gameplay: ★★★★★★★★

Heroic Autobots

Transformers, produced for Ocean by the acclaimed team behind **Shadowfire**, Denton Designs, drops you in the final stages of the eternal conflict between the heroic Autobots and evil Decepticons for control of the Earth.

Your task, as controller of the last five Autobots on Earth, is to guide them through a large 'planet' complex, collecting the 4 parts of the vital Energon energy Cube, and eventually, reassembling them at the centre of the complex. To negotiate the slopes, stairs, sudden drops and surprises which make up the



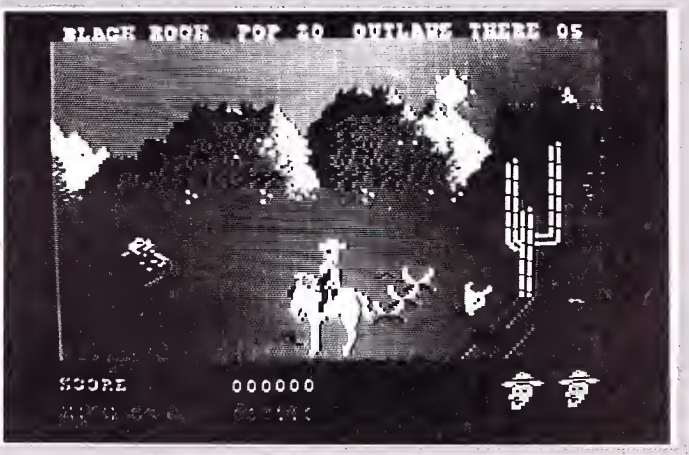
planet you will have to exploit not only each Autobots' robot form (which allows them to walk, and to fire) but their individual alter egoes — as aircraft, trucks, sports cars and so on. Each Autobot has individual levels of strength and firepower, which may be recharged by shielding them under the various 'defensa-pods' scattered throughout the game — and since only one Autobot can be in use at any one time, playing of each machines' strengths and drawbacks against the others is a major part of gameplay.

Gameplay is fast and furious, with smooth scrolling in all directions, clear, distinctive graphics, a great theme tune, and a really nice overall feel — though between running my sports car Autobot off sudden drops, and attempting to select a second autobot without 'sheltering' the first, I haven't really had time yet to do anything about those damn Decepticons!

Programs: Transformers, 64
Supplier: Ocean
Price: £8.95
Graphics: ★★★★★★★★
Sonics: ★★★★★★★★
Gameplay: ★★★★★★★★

Yee-Ha!

Outlaw marks a continuation of a trend Ultimate established with their previous release, Imhotep. Ultimate seem keen to diversify 'buying in' different game types from outside. Your large, well-animated figure begins his mission in the desert (well drawn scrolling backdrops complete with burning sun and cactus), shooting it out with five mounted desperadoes. (Sophisticated joystick controls lets your horse walk, trot, gallop and jump over obstacles whilst you duck, and shoot backwards or forwards.) Taking care of them allows you



to cross the border into town, where more villains appear briefly at windows and doors, at ground level and above, necessitating some quick diagonal-joystick sharp shooting... From there on in, it's all uphill, with vultures, Indians, rocks, arrows and lord knows what else coming at you as you progress into ever wilder new territories.

Sound effects are adequate, if not startling (ricocheting gunfire, etcetera), and the action is enlivened with bonus points for particularly tricky targets.

All in all then, a satisfying shoot-'em-up, though maybe something of a let-down for Ultimate's old guards fans.

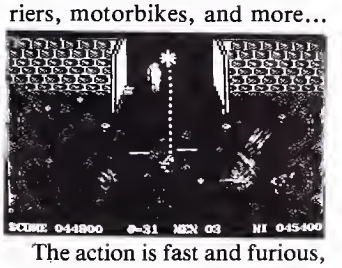
Programs: Outlaw, 64
Supplier: Ultimate
Price: £9.99
Graphics: ★★★★★★★
Sonics: ★★★★★★★
Gameplay: ★★★★★★★

Messy

Followers of the recent controversy over micro versions of the arcade smash **Commando** will no doubt be keen to check out the authorised version, just released by Elite.

As many of you will already know, Commando places you in the role of a soldier, only armed with a machine gun and a limited supply of grenades, fighting his way through overwhelming odds up the screen, and through 4 distinct sectors — jungle, compound, camp and stronghold. At first, you will face only endless waves of fanatical infantry, attacking from all sides, or springing from the covers of dunes, trenches and walls which bar your progress. Your supply of grenades can be replenished by running over ammo boxes scattered about the place, and extra points can be gained by liberating allied prisoners from their escort of guards, or by shooting the coloured-uniformed 'officers'.

As time goes on, though, the odds get tougher, and you'll have to contend with troop carriers, motorbikes, and more...



The action is fast and furious, but things can get rather flickery at times, and although Commando plays faster that its obvious rival, Alligata's **Who Dares Wins II**, there is an undefinable sense of messiness about the whole thing: there is always so much going on that there can be no sense of achievement, no feeling of precision, in any particular manoeuvre you make. Great Rob Hubbard music, a good shoot-'em-up — but not a great one.

Program: Commando, 64
Supplier: Elite
Price: £8.95
Graphics: ★★★★★★★
Sonics: ★★★★★★★★★
Gameplay: ★★★★★★★

MINTER MANIA

*From a British Airways flight between San Francisco and Heathrow, **Jeff** reports on the COMDEX Show, the condition of Muzak and the Amiga VS. The ST*

WELL, here I am back in the UK again. I've just been to the COMDEX show in Las Vegas. Commodore were supposed to have a booth there, and I went with high hopes of seeing plenty of Amigas and lots of good stuff...

No chance! Commodore didn't show up at all, and much gossip ensued as to the reason, are all the AMIGAs broke or had Commodore simply run out of cash?

Funky!?

Anyway, Atari made up for that, with some of the nicest stuff I've yet seen for any computer anywhere. Sierra Online had a number of Disney-licensed titles on show, along with an excellent animated 3-D graphics adventure called Kings Quest II which really blew my brains out. Activision were previewing HACKER for the ST; already a hit on the 64, the ST version looked really good. A firm called Michtron, unknown in the Commodore field, had an arcade adventure program called TIME BANDIT that looks and plays better than about 80% of REAL arcade games!

Of Commodore 64's I saw not one throughout the show. It seems that people are starting to ignore the humble 8-bitters and everyone's now an Amiga-ite or an Atari ST-freak and no-one's doing much 8-bit stuff any more.

And something really tragic has happened, too. If you've ever played my stuff like Matrix, Sheep or Mama, you'll have noticed references to the number 106, which I put in the games in honour of KMEL 106FM, a very good rock radio station in SF. Upon arrival in San Francisco, I retreated to my motel room (it was pouring with rain) in order to listen to KMEL and some good heavy rock. It started out OK, I tuned in and they were playing ZZ Top, but after the ZZ Top....

After the ZZ Top they played Jermaine Jackson. And then they wilfully and without provocation put out a song with the word 'funky' in it. (At this point I turned off the radio and put some Genesis in my Walkman to calm me down a little).

It seems that the station changed owners about a year ago, and that the new owners decided to forsake good rock in favour of bland mindless chartstuff.

KMEL reduced to Muzak. What a tragedy...

Anyway, I don't think we need to worry too much about there being hardly any C64s at Comdex — it's mostly a business show anyway, and very few games people were there, the only leisure stuff around was our lot on the Atari stand. Games people wouldn't really bother going to that kind of show. I'm sure that 8-bit software isn't just going to die off overnight, especially here in the UK where we can't all afford to run out and get 16-bits as soon as they appear. In any case, I think that the UK is definitely now producing the best '64 games around. We no longer have to rely on US imports to show the '64 at its best...advanced icon-driven stuff like the Denton Designs games, and amazing musical stuff like Rob Hubbard's soundtracks for **'Monty on the Run'** and **'Crazy Comets'**, are technically as good as any of the US stuff, and British software has what much American products lack: imagination. US games tend to be very well-executed and nicely-presented variants on a lot of ideas that we all had 3 years ago, whereas UK people aren't afraid to try out new ideas...

However, one particularly US game we've all enjoyed recently is **Winter Games.** I must confess I like this one, particularly the HotDogging and the bobsled. This past month I've also been into **Koronis Rift** and **The Eidolon**, both new out by Lucasfilm and both using fractal graphics as in **'Rescue on Fractalus'.** In KR you drive a tanklike vehicle over a mountainous planet, searching for and looting the hulks of old spaceships left behind by a dead civilisation; you add weapons to your ship whilst fighting off the Guardian Saucers. The analysis robot, within your ship is particularly nicely animated.

In **The Eidolon**, you have an H.G. Wells type of time machine and explore labyrinthine underground caverns. Basically you've got the same sort displays as with 'Rescue': not the world's fastest screen update, but worth the lack of speed for the realism of the displayed scene. If you liked 'Rescue' then you'll like the new ones.

Raiders

Any PSYCH-fiends out there should try to get hold of the hi-res version of 'Synth Sample' demo that's going around currently. This plays the music whilst generating moving vector graphics on the screen and is quite relaxing and hypnotic to watch.

My Amiga's becoming more interesting these days since I got hold of some really ace demo stuff, including the famous Bouncing Ball demo, some really great hi-res pictures, and of course the partially-completed version of **Radar Raiders,** a combat flight-simulator currently being developed by Sublogic. This uses real jet-aircraft sonics (sampled directly into the Amiga), and features solid 3-D ground features and the fastest frame-refresh rate I've ever seen on a home micro. I also have a sound totally awesome through my stereo!

It's interesting to note that the famous Ball demo is in fact 2 or 3 years old already! It seems that it was one of the original demos for the prototype Amiga which was being shown to selected people as long ago as autumn 1983.

Speaking of the Ball demo, Atari was being rather naughty at Comdex; they lined up an Atari, an Amiga and a Macintosh all running the Ball demo. The Atari version was noticeably faster and smoother than both Amiga and Mac; Atari pinched the demo as if to say 'anything you can do we can do better'. Indeed, graphically the Atari version WAS better; but the main point of Amiga's version was not to show the graphics capabilities (on the Amiga, the graphics are done by a trivial matter of scrolling 2 playfields; the hardware makes it easy). The Amiga version is intended to show off the system's zarjaz sonixx and multitasking...the ball is accompanied by thunderous sounds, in stereo. That is the main area in which Amiga scores over the ST, and the only thing which disappoints me in the ST: Amiga has advanced sound sampling, the ST has a piffling little sound chip which isn't even half as good as our own SID!! (Mind you, Atari has MIDI, and if you really want good sound there's nothing to stop you buying a synth and hooking it up to your ST).

CompuServe

While in the States, I got a good look at CompuServe, a US network that dwarfs our own Compunet. CompuServe has hundreds of thousands of subscribers, and lots of special areas for people with particular interests and computers. These are called S.I.G.s (Special Interest Groups); the one I looked at was the Atari SIG, but groups exist for just about any interest. You can chat to some interesting people online, too; you're likely to rub electronic shoulders with people like the Amiga designers, and famous programmers are often online and usually willing to chat or give advice. There's tons of free software too. I'd love to see a UK access node to CompuServe, 'coz it'd be really zarjaz for Commodorians and Atarians alike. You can get into CompuServe from the UK, but you're likely to get phone bills the size of Zaphod Beeblebrox's overdraft doing so...

Well that's it for this month. I'm off skiing over Christmas with Tony Crowther and a couple of people off the Net, which should be a great laugh (although I'll have to take plenty of aspirin in anticipation of the hangovers I'll be getting)... I will report on this sporting expedition next time! (hehehe) ■

DIMENSION computers l.t.d.

27/29 High Street
Leicester LE1 4FP
Tel: (0533) 57479

THE MIDLAND'S LARGEST HOME COMPUTER STORE

commodore

PRINTER OFFERS

COMMODORE MPS 801
DOT MATRIX PRINTER **£129.95***

COMMODORE MPS 803
DOT MATRIX PRINTER **£139.95***

COMMODORE DPS 1101
DAISY WHEEL PRINTER **£229.95***

STAR SG10C
DOT MATRIX PRINTER
with near letter quality mode **£279.95***

*The above prices include:
EASYSCRIPT WORD PROCESSOR, EASYFILE DATABASE, FUTURE FINANCE PLANNING PACKAGE.

COMMODORE DRIVE OFFER
1541 DISC DRIVE — £149.95
Including Super Zaxxon and Ultima III games discs.
OR
Quick Brown Fox Wordprocessor Disc and Practicalc Spreadsheet Disc.

COMMODORE 128 OFFER
COMMODORE 128 — £269.95
with FREE C2N Data Recorder, Quick Brown Fox Wordprocessor Tape and Practicalc Spreadsheet Tape.

COMMODORE 128D
with built-in 1571 Disc Drive **£499.95**

Any Commodore hardware order over £100.00 includes £250.00 in holiday vouchers valid with most major travel companies until December 1987

PRODUCT ENQUIRY HOTLINE

PLEASE RING FOR DETAILS OF THE WIDE RANGE OF HARDWARE, SOFTWARE AND PERIPHERALS AVAILABLE VIA OUR MAIL ORDER SERVICE.

COMMODORE C2N DATA RECORDER	~~£44.95~~	**£34.95**
Commodore MPS 801 Printer (without software)		£99.95
Commodore MPS 803 Printer (without software)		£119.95
Commodore 64/128 Green Screen Monitor		£99.95
Commodore 128		£269.95
Commodore 1570 Drive		£199.95
Commodore 128 + 1570 Drive		£449.95
DPS 1101 Daisy Wheel Printer (without software)		£199.95
Pair Quickshot II Joysticks		£14.95
Currah Speech 64		£19.95

PERSONAL CALLERS AND EXPORT ENQUIRIES WELCOME

ALL OFFERS STRICTLY SUBJECT TO AVAILABILITY.

SOFTWARE OFFERS

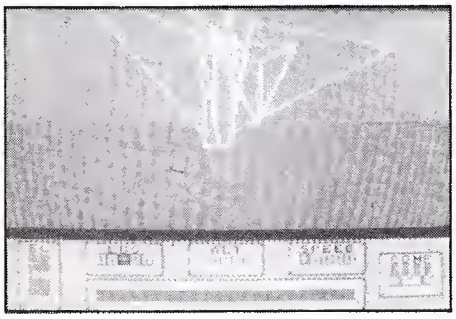
PRECISION		
Superscript 64, Disc	~~£69.95~~ —	£49.95
Superbase 64, Disc	~~£99.95~~ —	£59.95
Superscript + Superbase 64, Disc	~~£169.90~~ —	£99.95
Supertype (Typing Tutor), Disc	~~£25.95~~ —	£22.95
Supertype (Typing Tutor), Tape	~~£19.95~~ —	£17.95
Superscript 128, Disc*	~~£79.95~~ —	£59.95
Superbase 128, Disc*	~~£99.95~~ —	£74.95
Superscript + Superbase 128, Disc*	~~£179.95~~ —	£124.90
These offers end 31st January 1986		
COMMODORE		
Easy File (Database), Disc	~~£50.00~~ —	£19.95
Future Finance (Planning Package)	~~£75.00~~ —	£17.95
Easyspell (Easyscript Spellcheck)	~~£50.00~~ —	£19.95
AUDIDGENIC		
Wordcraft 40 (Wordprocessor), Cartridge	~~£99.95~~ —	£24.95
Magpie (Database), Cartridge + Disc	~~£89.95~~ —	£24.95
HANDIC		
Easycalc (Spreadsheet), Cartridge	~~£49.95~~ —	£14.95
Diary, Disc	~~£29.95~~ —	£9.95
Calc Result Advanced (Spreadsheet), Disc + Cartridge	~~£99.95~~ —	£39.95
PRACTICORP — Business Starter Pack		
Inventory (Stock Control Package), Disc		£29.95
Practicalc (Easy to use Spreadsheet), Disc		£44.50
Practifile (3800 Record Database), Disc		£44.50
64 Doctor (Hardware Diagnostic), Disc		£19.95
64 Pack (Unique Applications Pack), Disc		£14.95
	Total Retail Price	£153.85
	OFFER PRICE	£49.95
Practicalc II — Advanced Spreadsheet with Database/Wordprocessing facilities, Disc	~~£69.95~~ —	£49.95
Logo + Pilot (Educational Languages), Disc	~~£64.90~~ —	£14.95
Quick Brown Fox (Wordprocessor), Disc	~~£69.00~~ —	£9.95
Quick Brown Fox (Wordprocessor), Tape	~~£69.00~~ —	£9.95
Practicalc (Spreadsheet), Tape	~~£39.95~~ —	£9.95

Please add £1.00 towards carriage + packing on any software order, or hardware order under £40.00, and £5.00 Carriage on hardware orders over £40.00
To order, either send cheque/P.O. with coupon or ring *(0533) 57479/21874* with Access/ Barclaycard number.

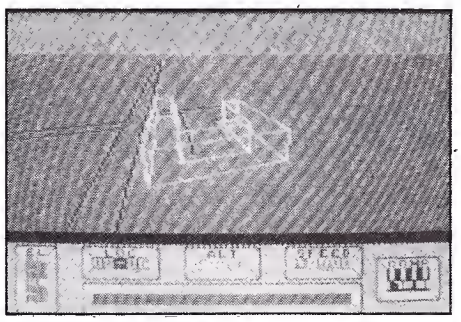
Send to: Dept No. CH2, Dimension Computers Ltd., 27/29 High Street, Leicester LE1 4FP.

ITEM	QUANTITY	PRICE
	TOTAL	

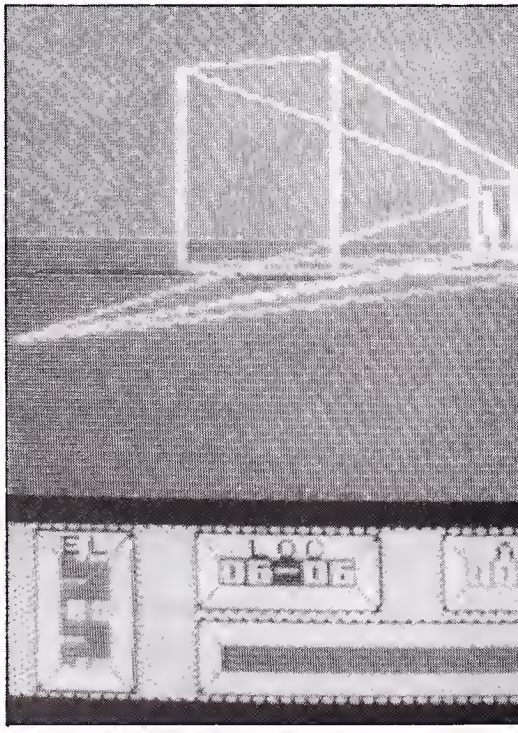
Name .....
Address .....
.....
Telephone .....
PLEASE ALLOW 7 DAYS FOR DELIVERY



▲ *Crashed on the surface of Targ*



▲ *Search for the briefing room*



MERCENARY

Amazing animated graphics, complex gameplay and total freedom of movement make Mercenary unique. ***Neil Tasker*** *explores the world of Targ*

IMAGINE a game in which you have, not a single screen of action, not even a hundred screens of action, but a whole world in your computer to explore and conquer. **Mercenary** is that game; after all the waiting, after being teased by the Atari version, it's finally on the CBM 64, and it's amazing.

Written by Paul Woakes, whose **Battlezone**-derivative **Encounter** set new standards for fast moving solid graphics animation, Mercenary comes from the relatively unknown Novagen Software. It just goes to show that biggest isn't necessarily best; Mercenary makes the efforts of some of the huge software houses look tame.

Mercenary uses a three-D vector graphic system to display the sensor-scan representation of the world of Targ. You play your way through a unique combination of flight simulator, trading game, strategy and arcade adventure, with very little idea of what will happen from minute to minute. The graphics are astonishing and the scale vast; for the first time, a 64 game gives the impression that a whole new reality has been created inside your computer, and all you have to do is explore it.

The screen display is fairly straightforward. In the lower section is a series of information read-outs from Benson, your portable computer system. These show your altitude, location, speed, bearing, and messages from Benson. The main part of the screen is taken up with Benson's representation of the entire sensory environment which is the planet Targ.

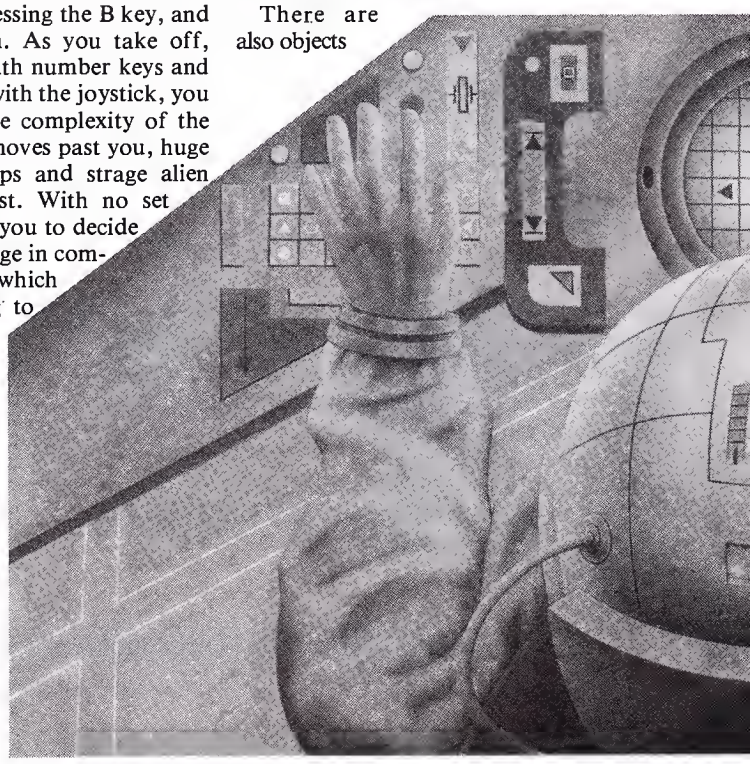
The planet has one major centre of habitation, which is surrounded by a wasteland. As the game opens, you find yourself beside your wrecked spacecraft, caught in the middle of a conflict between the normally peaceful Palyars and the hostile Mechanoids. All you want to do is to find a ship and get off-planet — but there should be an opportunity for profit by exploiting the war you find yourself caught up in.

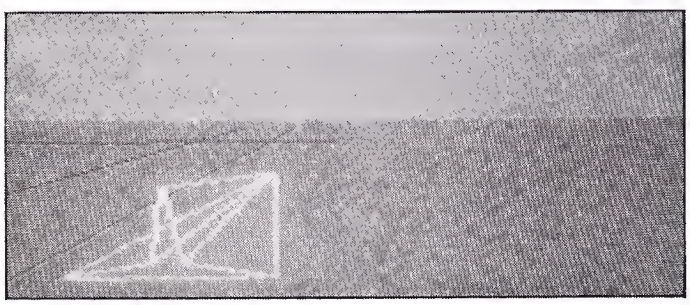
From there, the game develops exactly as you want it to. You can strike out towards the city, using the joystick to control the direction and speed of movement. As you get some idea of the vast scale of the game, you will realise that transport is needed if you are to achieve anything!

Benson will offer you the chance to buy a ship for 5000 Credits. It's almost all the money you have — but there's no alternative. Buying the ship, a fast, sleek Dominion Dart, you board by pressing the B key, and your adventures begin. As you take off, selecting your speed with number keys and altitude and direction with the joystick, you begin to appreciate the complexity of the game. The landscape moves past you, huge towers, crystalline ships and strage alien structures flashing past. With no set destination, it is up to you to decide your aim. Do you engage in combat with the craft which approach you, hoping to win a contract with one side or the other? Or do you bring your craft to ground, and attempt to enter one of the underground complexes of the Palyars?

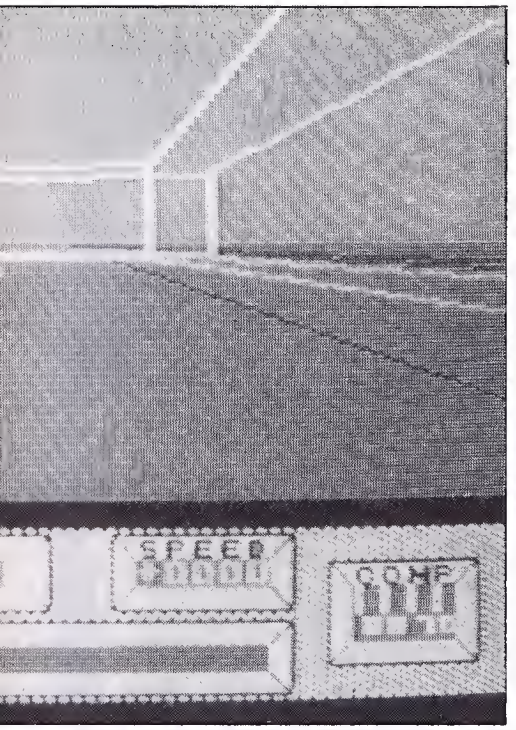
The flight simulation aspects of Mercenary are great fun, though it's not difficult to handle any of the ground or air-vehicles. Combat is fun too, watching alien ships explode into a million pieces as you bring your cannon to bear.

There are also objects





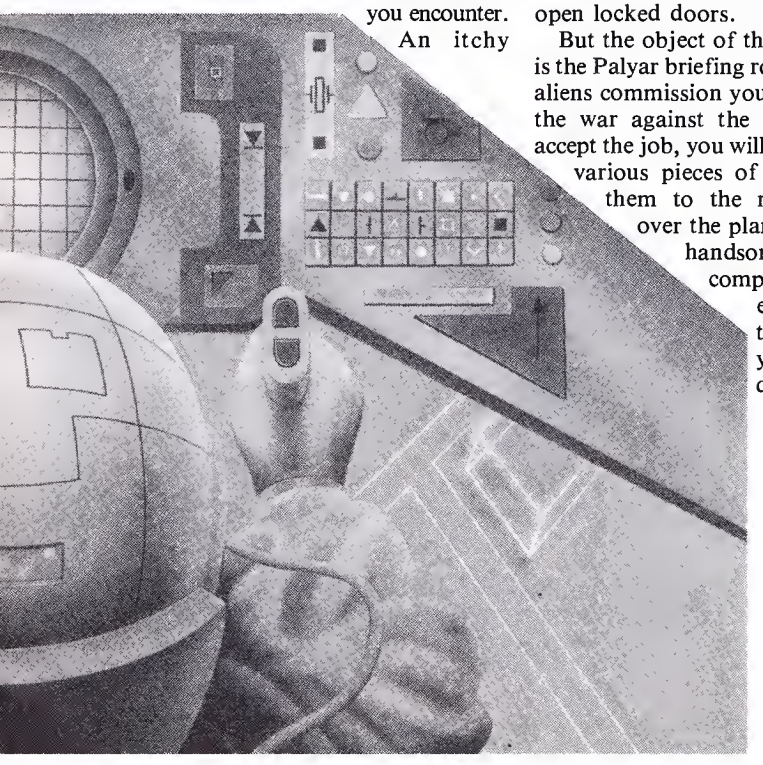
▲ *Alien ships fly past your Dart*

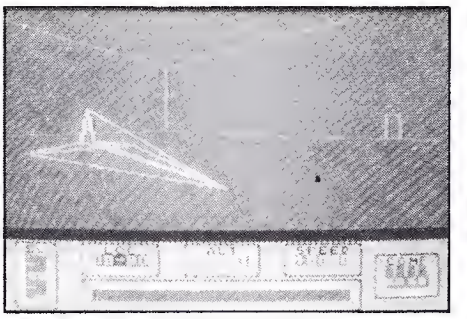


GAME: Mercenary
MICRO: CBM64
SUPPLIER: Novagen
PRICE: £9.95
£14.95 disk

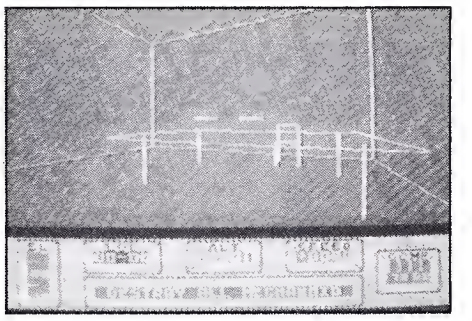
to find, including weapons which can enhance the capabilities of your ship.

If you receive a job offer from the Palyars, you immediately develop a sense of purpose — the offer of money is too good to turn down! Heading for the briefing centre at a given map location, you must avoid the temptation to destroy the buildings and ships you encounter. An itchy trigger-finger could have unfortunate consequences; shoot down passing dart ships and you might discover that you have destroyed the new cruiser of the Palyar Commander's brother-in-law. Retribution will be swift; Palyar ships engage you in combat, and despite your attempts to fight them off, you're unlikely to win at this stage. Losing a ship just returns you to the start.





▲ *In the underground hangar*



▲ *The Palyars briefing*

Palyars

Should you reach the briefing room without incident, you have to keep an eye on your speed, altitude and location in order to come in to land safely rather than plummeting into the ground. The briefing building is a three-sided structure. Landing your dart and manoeuvring into the opening, you come to rest and press the E key to operate the elevator.

At this stage you progress into a second, and quite different stage of Mercenary. Emerging in an underground hangar, you leave your ship (by pressing L) and proceed to explore the secret complex.

If you can find your way through the maze of tunnels (working your way backwards if you come to a locked door) you may find many objects which will be of use to you. In one room is a strange alien artifact, which, when picked up (by walking into it a pressing T), will enhance your weapon system by giving you on-screen gunsights. In another is a food unit, and in a third a key which will open locked doors.

But the object of this, your initial quest, is the Palyar briefing room. Here the unseen aliens commission you to fight for them in the war against the Mechanoids. If you accept the job, you will be required to collect various pieces of equipment, and get them to the mothership hovering over the planet. You will be paid handsomely for each mission complete, and you can also earn bonuses by capturing Mechanoids. If you accept the mission, don't leave without exploring the rest of the complex — there are objects there which may be useful later. How, for instance, will you reach the mother ship without aid? Your Dominion Dart craft has a limited ceiling, and the mothership is only a speck in the sky at full height. So you'll need a little technological aid to reach it, and other objects in the complex will help you.

To help you to travel around the complex there are transporter systems, but you will have to explore their limitations yourself.

Once you reach the mothership, after conflict with the mechanoids and the solving of some taxing problems, the rest of the action is up to you!

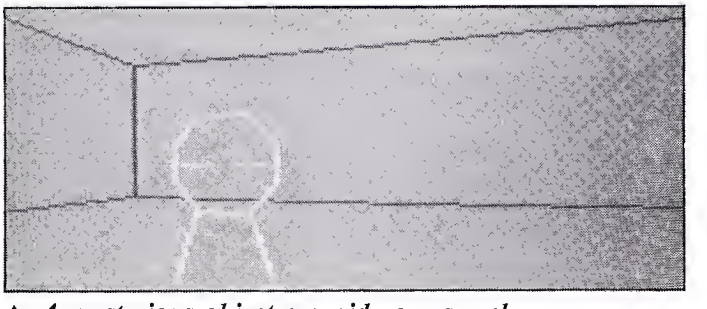
Mercenary is by far the best game of its kind on any home computer. It has a sense of reality which dwarfs that of any straightforward adventure game; a unique combination of strategy and arcade stills; programming which is impressive to say the least; and the promise that no two games will be exactly the same.

After converting the game for other home computers, Novagen will be getting to work on the sequel. **Mercenary — Escape From Targ** is only the first in a series of programs which will use Paul Woakes' programming skills. If you win through in the first game, escaping from the planet with a high credit rating, you can save your position on tape or disk. This will give you a high start rating on the second game, which so far only exists in storyboard form.

Wastelands

No doubt you'll need the save facility to get through the game; although it's possible to get through in three hours once you have solved everything and mapped the routes, the game could literally go on for ever. For instance, if you crash in the wastelands you could "walk" for hours to get back to the city; and there are other irretrievable situations where the only solution is to select CRTL-Q to quit, and start again.

You choose the action in Mercenary, and it was worth the wait! ■



▲ *A mysterious object can aid your search*

Evesham Micros

THE UTILITY SPECIALISTS

FREEZE FRAME

THE NEW GENERATION OF BACKUP METHODS HAS ARRIVED

"Freeze Frame" is the product that '64 owners have been waiting for. At the flick of a switch **"Freeze Frame"** will take control of your computer and freeze the program in memory, allowing you to **SAVE it to tape or disc**. The uses are endless, but typical applications are:

TAPE TO DISC: ANY program can be frozen and **transferred to disc** regardless of the type of loading technique used. (Disc save incorporates a fast loading system.)

DISC TO TAPE: ANY memory resident disc program can be backed up onto tape. (Choice of normal or turbo save speed.)

DISC TO DISC: It is possible to make a self contained back up of disc based programs that will both **load at high speed** and **allow the rest of the disc to be used as normal**.

TAPE TO TAPE: Tape back ups can be made at turbo speed with just one tape deck.

In fact **"Freeze Frame" will FREEZE any program** that is memory resident, and allow you to make a back up of that program onto tape or disc. The beauty being that the saved version can be a fast booting single file. The process is **completely automatic**, no knowledge of BASIC or machine language is required, just follow the prompts and the simple instructions for **100% success**.

"Freeze Frame" is a hardware "device" that plugs into the cartridge port of the '64. It does **NOT** dump the entire contents of memory, just the **working program**. Programs converted run **independently** of the hardware.

ONLY £39.95

WARNING: Don't be mislead by other adverts, if you want to transfer turbo load programs to disc, software only utilities are **inadequate**. They suffer from a variety of drawbacks including poor success rate, awkward to use, greedy on disc space and overpricing.

DOUBLER

The tape back up "device"

Doubler has been an **enormous success** and continues to sell very well. Why? Because it is the **best product of its type** on the market. Doubler uses a unique method that copies **all types of software** regardless of speed. It consists of **hardware and software**. The software is the key part as unlike other products of its type Doubler creates a **brand new machine copy**. It is very easy to use and very successful. In fact our tests **have proved** that this "device" can achieve **100% success**.

Requires access to two data recorders.

ONLY £12.95

Why settle for less—this is the best.

HARDWARE SPECIALS

STAR SG10C
The ultimate Commodore ready printer. 120 cps or 40 cps in near letter quality mode. Friction and tractor feed.
ONLY £249.00

MPS803 PRINTER
Exceptional print quality for the price.

1541 DISC DRIVE **ONLY £119.95**
Look at this price, it is not a misprint.

DISC NOTCHER **ONLY £149.95**
Handy new tool allows you to punch a second write protect notch in your discs. Double your disc capacity by using both sides of your discs.
ONLY £9.95

DISC DISECTOR V3.0

Now the ultimate disc copying and utility program for the CBM 64 with 1541 disc drive has been **improved even further**. As well as general improvements plus the addition of some useful utilities two important new programs have been added:

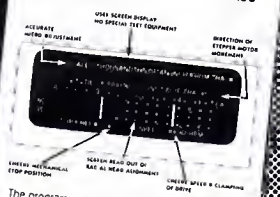
The Evesham Nibbler
This is the first copier of its kind to appear on the U.K. market. It is a **true nibbler** (byte for byte) copier that will copy **ALL DOS errors automatically**. This includes DOS errors 20–29 inc. plus non standard errors like half tracks, extra tracks, non standard sync, renumbered tracks, etc. They are all treated as normal work. No knowledge is required at all it just **"nibbles away"** and produces a perfect copy. Yet it **only takes eight minutes**. Has copied **all discs tested** (except itself). A **class above** anything else available.

Fast File Copier
An **incredibly handy** selective file copier that LOADs and SAVEs at **five times** normal speed. Sounds useful? You won't believe how much until you have used it.
As well as these programs, "Disc Disector" incorporates a whole host of useful utilities including the following: **Fast Format, Selective Menu Maker, Disc Editor** (new sophisticated machine code version), **Scratch/Unscratch, Fastcopy, Rename, Fastload** (four times faster), etc. etc.
This program is an **essential purchase** for the 1541 user.
ONLY £29.95

Customers with earlier versions may return them along with £9.95 for "V3.0".

ALIGNMENT PROBLEMS?

1541 PHYSICAL EXAM
IS YOUR 1541 HEALTHY? OR WOULD ITS PHYSICAL EXAM LOOK LIKE THIS ONE?
£39.95



The program includes a digital alignment disc and software which allows you to **accurately check and correct** disc drive alignment. The instruction booklet is **very detailed**. Also includes quiet drive stops to **stop** that "hammering" thus preventing further problems.

ONLY £39.95

Quickdisc+ FAST LOAD PLUS UTILITY CARTRIDGE

Get a **QUICKDISC+** cartridge plugged into your '64 and your 1541 will really **start to perform**. So many features per pound (sterling) that you will hardly believe it. Includes the following:

Fast LOAD and SAVE (four to five times normal speed). Works with most protected software. Can be switched in and out from the keyboard.
Fast Format takes just 10 seconds.
Fast Backup copies an entire disc in four minutes. (Not heavily protected software.)
Fast File Copier for selective fast copying.
Improved DOS commands (DOS 5.1) makes for easy use of the disc drive, e.g. $(RETURN) will LOAD and display a directory without overwriting BASIC, SHIFT RUN/STOP will LOAD"0:*",8,1 etc. etc. Very, very useful.
Incorporates Centronics printer software (user port) **with CBM graphics** capability. See "Commodore Connexion" for suitable lead.
A RESET switch is fitted. (We have found this to be "unstoppable", it also preserves the tape buffer.)
NO MEMORY IS USED by this cartridge, it is totally "transparent" and uses special switching techniques.
Now the price. No, not £49.95, it's **not even half** that much. Can you afford to be without QUICKDISC+
ONLY £19.95

No extra connections are necessary with QUICKDISC+ and unlike most similar products it is compatible with printers and second drives.

SELECTED UTILITIES

DISCO
Still **the best tape to disc** utility for normal speed loading tapes. Simple to use but rarely beaten. **ONLY £9.95**

FASTBACK
Converts most slow loading tapes to **"turbo" load**. Single and multi part. Very easy to use. **ONLY £9.95**

BIG MOUTH
A superb text to speech synthesis program that is great fun to use. **Unlimited vocabulary.** **ONLY £7.95**

ROCKET
A useful resident fastload/save utility for the '64. Handy for the programmer who hasn't a disc drive. **ONLY £7.95**

TAPER
Tape copier for normal speed loading software. Easy to use and very rarely beaten. **ONLY £5.95**

COMMODORE CONNEXION
Software and cable for connecting **any centronics type printer** to the '64. Or use with Quickdisc+. **ONLY £17.95**

QUICKDISC
Speeds up disc loading by **four to five times**. Includes menu maker and other utilities. **ONLY £11.95**

AZIMUTH 3000
Allows you to **check and realign** your data recorder head alignment. Screwdriver provided. **ONLY £8.95**

THE ANATOMY OF THE 1541
Get to grips with your 1541 with this **very detailed book**. Includes a full ROM dissassembly. **ONLY £8.95**

THE ANATOMY OF THE '64
The best insight into the '64. Lots of **"secret"** information. **ONLY £8.95**

ZEUS ASSEMBLER
Reviewers have consistently considered this **the best** cassette based assembler. **ONLY £9.95**

FIRST PUBLISHING ASSEMBLER MONITOR
The **ultimate** in disc based assemblers. From the same home as the "anatomy" series. **ONLY £19.95**

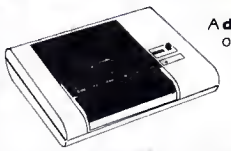
DTL JETPACK cassette
BASIC compiler will handle programs up to 12K long. Easy to use, handles **all** BASIC. **ONLY £14.95**

DTL JETPACK disc
Disc based compiler will handle **any** program length. This is the one **the professionals use.** **ONLY £29.95**

3M Floppy Disks

BOXES OF TEN DISCS
SS/DD £16.00
DS/DD £20.00

NEW SPECIAL PACKS WITH PLASTIC CASE
SS/DD ..... £17.00 including Case
DS/DD ..... £21.00 including Case



DATA RECORDER
A **dedicated** data recorder designed for use on the CBM 64 or Vic-20. Specification as C2N but **with pause button.** Model available for the PLUS4 or 16 at same price.
SATISFACTION GUARANTEED.
ONLY £29.95

All prices include P&P and VAT. Send cheque, Postal Order or Credit Card No. Credit Card orders accepted by phone. Callers welcome. Wide range of goods stocked. Trade enquiries welcome. European orders send price as advertised. Outside Europe £2.00 for air-mail. Mail order to Evesham Shop please.

EVESHAM MICROS
BRIDGE STREET, EVESHAM, WORCESTERSHIRE
Tel: 0386 41989

MICRO CENTRE
1756 PERSHORE ROAD, COTTERIDGE, BIRMINGHAM.
Tel: 021-458 4564

ACCESS VISA

Worms within worlds

Ken Matthews discovers the perils lurking within Level 9's Paradise and Ocean's Land of Fantasia

QUITE a mixture in the goodies bag for this month, including the long-awaited **Worm in Paradise** from Level 9 to complete the Silicon Dream trilogy!!!

It has arrived — the first mega-adventure! Over three million locations in the Worm in Paradise — if you take the same view as Level 9 did of **Snowball**.

If you look at the trilogy you can really follow the development of Level 9 into Britain's premier adventure writers, **Snowball**, a huge text-only game with a staggering amount of text packed into it. **Return to Eden**, an enormous and enormously enjoyable game featuring graphics and type-ahead functions still in the same memory space! And now the **Worm in Paradise** with 1,000 word vocabulary, type-ahead, over 50% text compaction, multi-tasking so you don't have to wait for pictures to the drawn and, to top it all, a full sentence parser in the Infocom style — making the game the most sophisticated cassette based adventure ever and Level 9 serious contenders for the world adventuring title!!!

Enoch

All the technical stuff aside, Worm is a truly fascinating game and it's clear that a huge amount of work has gone into the planning of the storyline — as usual.

You are given no real idea what to do beyond a clue on the poster/advert that something stinks in the city of Enoch and you must put things to rights.

There is a wealth of information on the game inlay which proves my comments on the depth of thought the Austins have put into devising a city that's not named Enoch without some reason as you'll soon discover. Reading the inlay carefully though is a must — there are several important pieces of information that will help you out later on as you play the game.

You begin in a dream of Paradise complete with apple and temptation but will soon find yourself in the huge Pleasure Dome where many of Enoch's unemployed pass their time. Moving out and about is simple enough (but be sure that you'll need your map-making gear to hand).

As for ET the Eden transport system, going round Spaghetti Junction in a run-down C5 would be a breeze compared to sorting this one out! And of course you need to sort it out to get anywhere useful — including your own Habidome sweet Habidome. Still, with a little maths, some though and a lot of swearing (it's a bloody long time since I did my degree) this is what goes on — I think:

There are three transport grids, north, east and west. Your position on each grid is fixed by a seven colour code (a la Snowball) which can be turned into a number using the electronic 'resistor code' (look it up). the first colour/number tells you which grid you're on and never changes. So once you know which colour corresponds to which ET grid you can forget it. With me so far? Good . . .

Circles

Now picture a huge dart board with not twenty but one million numbers round the edge and twelve locations from this edge to the centre of the board. You could always walk around the edge until you reach your desired exit but you'll probably die of old age before you get there. Fortunately there is the easy way . . . The bigger a circle is, the longer the outside edge (circumference) gets. So if you walk around the edge of a smaller circle you move through more of the 360 degrees of the circle. Does that strike the right chord? So the easy way to get to higher numbers is to move north towards the centre of the grid and then east or west towards the exit you need. If you go too far you can move out towards the edge again so you cover less ground with each move. A little practice should give you the idea.

Once you've sorted that out, life is much easier but you'll still need your wits about you since you score points for doing some odd things around Enoch but those with a social conscience and the right handshake should go far!!

I'll say no more, nor urge you to buy the game, since every right thinking individual will already own it — Worm is a true landmark in adventure gaming.

Last for this month is **Neverending Story** which, correct me if I'm wrong, is Oceans first foray into the adventure scene proper and boasts a graphic text adventure approach.

Like the film, the game is concerned with saving the land of Fantasia from the 'All Consuming Nothing' which is slowly spreading through the land unless someone from the 'Real World' will believe in Fantasia and renew its life.

You play the small boy Atreyu, picked by Carion the physician as the only one who can find the saviour of Fantasia.

The game itself is over 100K of code and needs to be played in three parts which are loaded as you reach them. You must complete part one before the game will allow you to move onto part two etc. Beware! You will need some items you find in part one in part two etc. so be sure to carry any items you haven't used along just in case.

Commands are entered in the old verb/noun style and the vocabulary is VERY limited. Happily, all of the verbs that can be used seem to be listed on the cassette inlay and the objects that can be manipulated stand out clearly in the text.

Quicksave

The graphics in the game are quite simply excellent and among the best I've seen on the 64. They really do enhance the game and not at the expense of locations — there's loads to explore and quite a few problems to solve.

Now the rub — if you happen to get killed in part two — and the chances are very numerous — then you must reload part one and replay it and then load part two to get back to where you were! Because of the way loading is prompted from within the game there is no facility to save. Being rather old and irritable this soon gave me the hump but if you've got more patience maybe you'll see it through to the end!

Neverending Story is a very good game with its fun spoiled for me by the constant reloading — a QUICKSAVE feature saving a position in RAM and Activision use would sort this out or, for the lucky drive owners, a quick loading disk version.

That's it for this month — **Wishbringer** has only just arrived in my sweaty little hand and I haven't got the room left to do it justice so I'll feature it next time. I'll also be going through a preview copy of the **Snow Queen** from St. Bride's School. ■

THE 64 SOFTWARE CENTRE
1 Princeton Street, London WC1
01-430 0954

SOFTWARE PRICE LIST — Prices include VAT

d = disk c = cassette r = cartridge

Accounting systems (Office use)

Anagram Systems — Sales Ledger	d	£75.00
Anagram Systems — Purchase/Nominal Ledger	d	£75.00
Anagram Systems — Cashbook	d	£75.00
Gemini — Cashbook (with nominal analysis)	d	£34.95
Gemini — Cashbook (with nominal analysis)	c	£29.95
Gemini — Final Accounts	d	£34.95
Gemini — Final Accounts	c	£29.95
Gemini — Cashbook/VAT/Final Accounts	c	£49.95
Gemini — Cashbook/VAT/Final Accounts	d	£59.95
Studio — Payroll 64	d	£49.95
Dell — Invoice Generator II	d	£24.95

Stock Control systems

Practicorp — Inventory 64	d	£19.95
Gemini — Stock Control	d	£24.95
Gemini — Stock Control	c	£19.95
Anagram — Stock Control	d	£75.00

Home applications

Gemini — Home Accounts	c	£19.95
Gemini — Home Accounts	d	£24.95
Gemini — Combined Home Pack	d	£39.95
Gemini — Combined Home Pack	c	£34.95
Adamsoft — Checkbook Manager	d	£14.95

Database Filing Systems

Fieldmaster — Mail label	d	£19.95
BI — The Consultant	d	£125.00
Practicop — Practifile 64	d	£24.50
Precision — Superbase 64	d	£59.95
Precision — Superbase Starter	d	£34.95
Gemini — Database	d	£24.95
Gemini — Database	d	£19.95
Gemini — Mailist	d	£12.95
Gemini — Mailist	c	£9.95
Fieldmaster — Record Card	d or c	£19.95
Dell — Superfile	d	£14.95
Supersoft — Instant Recall	d or c	£17.95

Spreadsheets

Handic — Easy Calcresult	r	£39.95
Handic — Advanced Calcresult	r+d	£79.95
Practicorp — Practicalc II	d	£49.95
Supersoft — Busicalc 1	d or c	£17.95
Supersoft — Busicalc 3	d	£49.95
Fieldmaster — Worksheet	d, f or c	£9.95

Word Processors

Fieldmaster — Pagewriter	d or c	£29.95
Bank Street Writer	d	£69.00
Precision — Superscript	d	£69.95
Supersoft — Word Perfect	d	£19.95
Superoft — Word Perfect	c	£17.95

Utilities

Adamsoft — Ultrabasic	d	£19.95
Adamsoft — Chartpak 64	d	£24.95
Adamsoft — Superdisk	d	£12.50
Adamsoft — Graphics Designer	d	£19.95
Blitz compiler	f	£50.00
Access — Mach 5 Fastload	c+d	£39.95
Access — Master Composer	d	£49.95
Crystal — Zeus 64 Assembler	c	£9.95
Crystal — Zeus 64 Assembler	d	£14.95
CSM — Disk Aligment Program	d	£59.95
Koalapad and printer	c+d	£125.00
Fieldmaster — Poster printer	c	£19.95
Commodore — Simons Basic	r	£27.50
Kuma — BC Basic	r	£47.50
Practicorp — 64 Doctor	d	£19.95
Supersoft — Victree	r	£56.35
Supersoft — Mikro Assembler	r	£59.80
Supersoft — Zoom Monitor	d	£14.95
Supersoft — Toolkit 64	c	£9.95
Supersoft — Toolkit 64	d	£11.95
Activision — The Designer's Pencil	c	£11.99
Jetpack compiler	d	£39.95
Hesware — forth 64	c	£54.95
Jetpack Compiler	c	£14.95
FP — Pascal 64	d	£34.95
Oasis — Machine Lightning	c	£29.95
Talent — Panorama	c	£17.95
Talent — Panorama	d	£19.95
Skyles — 1541 Flash kit	r	£89.95
Epyx — Fast load	r	£49.95
Orpheus Pascal	c	£24.95
Broderbund — The Printshop	d	£44.95
Broderbund — Printshop graphics library I or II	d	£29.95
Broderbund — The Music Shop	d	£49.95

Simulations

Flight Simulators

Microprose — Solo Flight	c or d	£14.95
Sublogic — Flight Simulator II	d	£49.95
Sublogic — Flight Simulator II	c	£42.95
Supersoft — Interdictor Pilot	d	£19.95
Supersoft — Interdictor Pilot	c	£17.95
EA — Sky Fox	d	£12.95

ALL IN STOCK NOW — Callers welcome
(10am-6pm including Saturdays)

Mail Order: Cheque or PO — add £2 for items over £20, others free. Credit cards (Access/Visa): phone or write. Immediate despatch.

The 64 Software Centre
1 Princeton Street, London WC1

Please supply the following items:

1..... Qty.... @ £.....
2..... Qty.... @ £.....
3..... Qty.... @ £.....
4..... Qty.... @ £.....

TOTAL £.....
POSTAGE £.....
TOTAL £.....

Name.....
Vis/Access Card No. .....
Address .....
.....
Date ..... Signature .....

The nets tangled

Micronet 800 or Compunet — which service do you need?
***David Janda** helps you to make the difficult choice*

THERE ARE numerous modems and software packages available for accessing Micronet, which is a Viewdata type database. Modem House, Tandata, Pace and Miracle Technology produce 'packs' that include the communications software as well as the modem. Most of these manufacturers include a free quarters subscription to Micronet as an added incentive to buy their package.

Compunet, however, must be accessed with the CBM modem which costs £79.99. Communications software on Rom inside the modem includes an editor for preparing mail off-line.

The good news is that a free program on Compunet allows the modem to access other Viewdata databases. Another free program enables users to chat to each other and transfer software. Other programs can be purchased on Compunet that allow the modem to access scrolling type databases. It's even possible to buy the Mustang package from Micronet, thus enabling CBM modem users to access Micronet/Prestel.

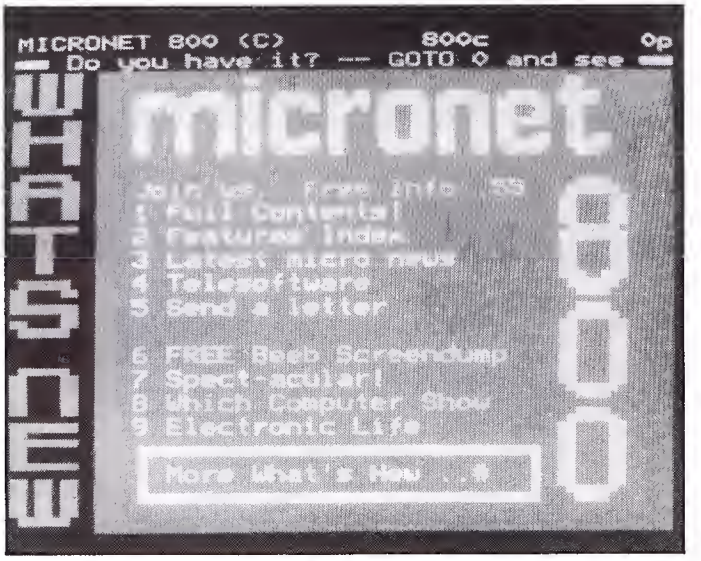
Registering on Micronet normally takes ten days, and you'll be sent your ID, mailbox number, password and local Prestel telephone number through the post. There is no initial payment to make, and the quarterly subscription (£16.50) together with other costs incurred is sent on a bill separate from your phone bill each quarter.

A year's basic subscription is included free with every CBM modem together with a registration form and bank mandate. The basic subscription is limited and doesn't allow users to purchase software. I would recommend 'upgrading' to a standard user sub, which costs a few pounds more each quarter. The bank mandate is in order to provide you with credit to purchase software/goods on the system.

The Prestel/Micronet structure is simple. Numbered pages — called frames — consist of 25 lines by 40 characters and include colour and low resolution graphics (80 by 75). Other effects including double height, flashing and hidden text are also possible.

Moving about Micronet is achieved by numbered options, for example press 5 for news, or by going directly to a page by entering its number. There are no commands as such, because different features are accessed by going to a specific page and keying numbered options.

Compunet's structure is based on directories. Each directory is numbered and given a title. Accessing a directory can be done by selecting the GOTO command from the duckshoot menu and entering the directory number. Each directory has other directories leading to and from it, and other commands are used to select the previous or next directory.



Entries within a directory can be downloadable programs, text/graphics, special link programs or other directories.

Prestel's free electronic mail enables Micronet subscribers to send mail to any other Prestel subscriber by entering their mailbox number together with the message. A subscriber is informed that mail is waiting whenever they logon or logoff. Up to five messages can be stored, and an International telex service is also available.

Two Chatline services allows subscribers to send messages which can be read by anyone using the Chatline. Daisychat allows readers to flip forwards and backwards through messages, while the faster Quickchat overwrites the previous message when a new message is sent.

Another method of spreading the word is with Gallery. Frames can be hired on a quarterly basis and used to upload text/graphics of whatever you like — as long as it's not abusive!

Compunet's courier service enables subscribers to send mail to any other subscriber. A mini-mailshot is possible because an item can be sent to five subscribers at once. A mailbox is displayed on the logon page if mail is waiting for you, otherwise a MAIL prompt is displayed on the next directory you go to.

Chat online is a 'gathering place' for those who wish to chat together, with messages being uploaded onto a specific area for all to see. Partyline is a new development which enables up to eight users to chat together.

The screen is split into two areas; the top shows messages put up by other subscribers while the bottom part of the screen is used to display the message you are entering.

If you can afford it, subscribe to both services; they are worth it! If, however, you have to make a choice, then consider what your needs are.

Micronet provides a service with a lot of editorial content. Besides the telesoftware, chatlines and online quizzes, there are software/hardware reviews, features, news items, interest columns and so on. In other words it's all done for you. You can be assured that there is always going to be something different to look at on a daily basis.

Compunet is quite different. The users tend to be a bit more technical and Compunet really is what YOU make of it. This is because there is very little editorial content (a good thing in some ways). Users are left to upload their own text and programs in an area called The Jungle. On the one hand it results in a lot of confusion for the first-time user trying to get the feel of Compunet, on the other it provides the reader with some very stimulating reading.

Whatever service you choose, you'll be introducing yourself to a completely different aspect of computing — have fun!

David Janda can be contacted on the following services: One-to-One: 13419001; Micronet: 919992677; Compunet: D.JANDA.

For more details of the services, and available comms hardware and software, contact Micronet 800, 01-278-3143; Compunet, 01-965-8866; Pace, 0274-488211; Tandata, 06845-68421; Modem House, 0392-69295; Miracle Tech, 0473-216141.

The CBM modem can be purchased direct from Commodore or Compunet, and the Mustang Viewdata software (for the CBM modem) can be purchased from Micronet 800.■

WAR MA

Military simulations on the 64 can turn your micro into a ba

***Ken Matthews** fights his way through some*

ARGUABLY, Man has been playing wargames since the first game of chess, and they have developed over the years to form two main types: The miniature wargame which uses models as the playing pieces, and board wargames which are much more economical of space, since smaller scales can be used and thousands of troops represented by one counter a centimeter square! Now there are computer wargames too.

Wargames are usually played to strict rules and combat is resolved by reference to charts and tables of figures — just the sort of job handled accurately and quickly by a micro.

One particular software house in the USA, Strategic Simulations (SSI) has been producing excellent war and strategy games for Commodore machines for several years but, like much quality US software, with price tags around the £40-50 mark not many people were able to pay to play.

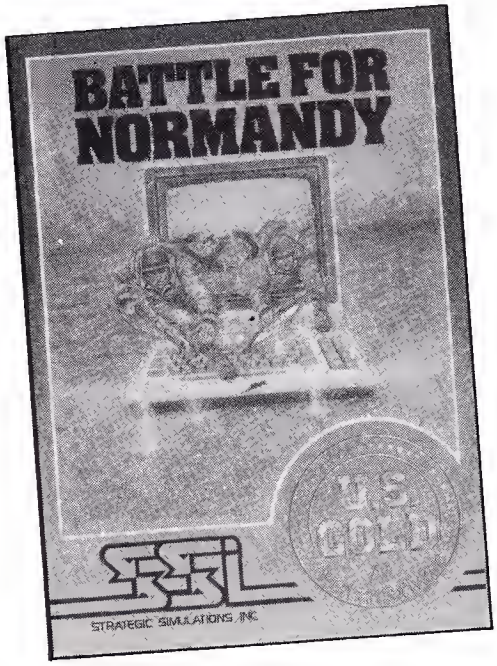
In steps our hero — US Gold! putting **Combat Leader** and **Battle for Normandy** on our screens at bargain prices with other SSI titles promised for future release.

Coventry based PSS Software has joined the wargame scene with its controversial **Theatre Europe** and has followed up with **Battle of Midway** and two new games, **Battle of Britain** and **Falklands 82.**

Combat Leader is an excellent tactical game based around modern tank and mechanised infantry platoons.

The game is played on a vertically scrolling map which consists of dark green features on a pale green background. Hills, trees and depressions form the terrain. Unfortunately, both friendly and enemy untits are also displayed in dark green making them hard to distinguish from each other or from the trees when in cover. This is the only ciriticism I have of the game though since the attention to detail (typically SSI) and the variety of options given the player are virtually limitless.

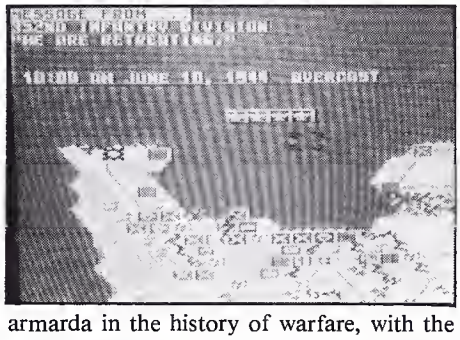
The game options range from a novice game for the complete beginner, an intermediate game and a selection of advanced games, each with a different objective. Various units of mechanised infantry, rifle, mortar, machine gun and anti-tank platoons, can be deployed for some exciting firefights.



If all of the above isn't enough you can construct you own scenarios from scratch with a huge variety of terrain and game elements using vehicles and situations from World War II to the present day.

Combat Leader is an excellent introduction to tactical tank/infantry battles.

The second puts you in Eisenhower's place as Supreme commander of the largest



armarda in the history of warfare, with the task of getting the foothold to allow the Allies to sweep east and liberate Europe.

The whole of the Normandy peninsula is represented in the many screens of the game and you have 33 Allied Divisions at your disposal. You have until the end of June to occupy Cherbourg, Caen and the road networks around St. Lo. Extra territory freed and enemy units destroyed will give better victory points.

Once again the game is very accurate in the historical sense, and a great deal is made of the very intricate problems of keeping the huge army supplied and supported.

Allies

Although, as I've said, the authors have taken great pains to include as much historical detail as possible, you are given the option at the beginning of each game to change certain features to make the default (expert) game playable for a novice or intermediate player. The manual thoughfully gives some suggestions for these changes which won't ruin the enjoyment of the game by making it too one-sided.

You can play against the computer or a human opponent but there is no facility for the computer to play the Allied role. The game has a Save feature and a handy reference chart gives you an at-a-glance guide of what's going on.

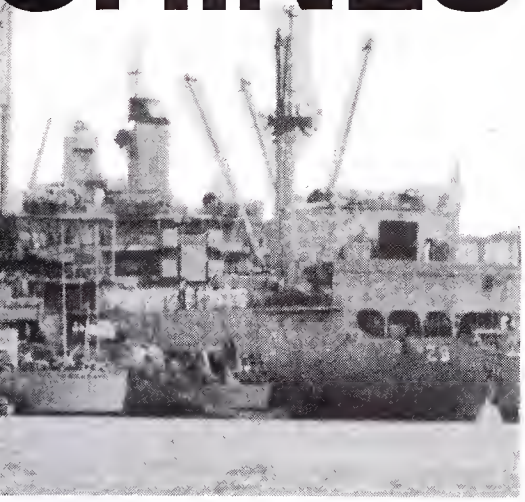
Microprose software have become known, via US Gold, for some pretty popular flight simulators but their two latest games have got me by the throat.

The first of these, **Crusade in Europe** is a real military megagame featuring five battles from the World War II liberation of Europe.

The first simulates the Normandy landings and subsequent battles. The approach to the game though is very different. It is played on an extremely large and colourful scrolling map of the whole of north western Europe from Normandy to the Ruhr, although some scenarios limit the amount of map you can scroll though. The scale is much smaller than the SSI game, so it provides a much better strategic overview of the present situation.

A joystick can be used with the game to issue orders to individual units — very quick

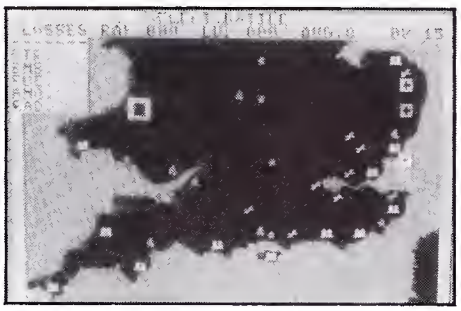
CHINES



e-commander's headquarters.
d campaigns

and useful it is too! Another helpful feature is the ability to swap between the conventional system of showing the make-up of each unit in a small rectangular box and more sylised symbols like a rifleman for infantry or a flag for an HQ. This should help the newcomer a great deal.

Handling the units is quite easy, you just tell them where to go — no matter how far



the computer handles the rest by moving them according to terrain and how the unit is formed at that time. You can change orders at any time though which is handy if enemy re-inforcements should arrive at the edge of the map behind your lines etc.

As units meet and fight you get an audible warning and sometimes a visual idea of what's happening. Of course you may be fighting off screen, but in that case you'll get a report from the unit on the message area at the top of the screen.

Supply lines are taken into account although not in as great detail as in the previous game — the computer handles it for you but you must becareful not to take on too much at once or units will run out of supplies even if a line of supply exists — a unit in combat uses much more ammo, fuel etc. than one in reserve. You can provide airstrikes to soften up enemy formations or destroy supplies but there is no facility for naval bombardment.

All of the details of each game and the historical background is supplied in the excellent, well-illustrated manual which seems massive (60 pages) but need not be all read before you play. In fact most people should be able to play along while reading the manual and pick up the detail by experience.

In this first scenario no fewer than five options are available, such as the Germans reacting quickly, or using Rommel's strategy. The other scenarios are Race to the Rhine, Market Garden (Arnhem) and the Battle of the Bulge. Each of these have at least two options. All of the games allow you to play as Allied or German commander or against another human.

Finally, as if there wasn't enough, the last scenario Crusade allows you to play the whole European campaign from Normandy to the Ruhr — to me at least — a mind-boggling feat of programming!

Crusade in Europe is quite simply brilliant — by far the best and most enjoyable war-game I've ever seen on a micro — it's a joy to play and the range of difficulty levels allow novce and expert alike to get many months of pleasure at a price so low you'd be insane not to buy it.

Also out will be Decision in the Desert which covers five of the pivotal battles of the Eight Army in North Africa from 1940-42.

Since it is a follow-up to Crusade in Europe the mode of play is identical and the manual is just as thorough with some very nice maps.

The scenarios are well chosen to represent the changing fortunes of the campaign; Sidi Baranni where the British drove the Italians back to the west of Tobruk. Next is Rommel's attempt to push us back out of Libya in Operation Crusader followed by his finest hour at Gazala. Fourth is the first battle of Alamein where Rommel tried to push the British back to the Nile. Alam el Halfa marked the end for Rommel as the Allies picked on supply lines stretching from Europe across Africa.

There we are then, another masterpiece — no campaign game though but still plenty of meat to get your teeth into and the games are quite long so the pause and save features will come in handy.

Two splendid games for us enthusiasts with more to follow including the Vietnam War and a chance for us to win where the Americans failed. I for one will be knocking on US Gold's door when I hear they've arrived.

Actions

Back to the UK for **Battle of Britain**, PSS's latest in their Wargamers Series.

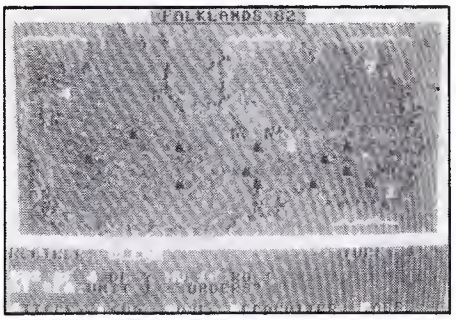
Like their previous titles BOB seems to attempt to please both arcade players and wargamers by combining action sequences and strategic planning — it doesn't quite come off, but if it's any comfort I found the aerial combat sequences better than most 'simulators'

You can get rid of the action sequences though, and play on the map of England showing major airfield, cities and some radar stations. Enemy formations appear at the edges of the map and you deploy squadrons of fighters to intercept them. Your planes must land to re-arm after each combat, and only carry limited fuel so lengthy patrols are our of the question.

You must defend the cities or your rating will suffer but if your airfields are bombed you must divert you forces or chance suffering the loss of valuable fighters as you land.

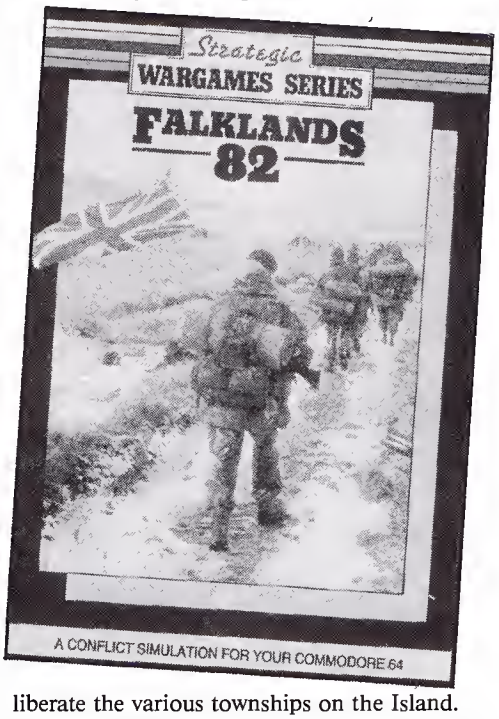
There are three levels of play, Training for the novice which covers a day of campaign, Blitzkrieg which is also over a day but at a 'hell on wheels' pace. The Campaign game covers a month of battle with a daily re-supply of pilots becoming less skilled as time goes on.

If PSS intend to cater for wargamers I think they would do well to learn from the excellent material above, and use the memory space wasted on arcade sequences and music to produce more detail in their games which seem to be very good, well thought out ideas let down by poor execution.



I thought there had been some improvement when I received **Falklands 82** from PSS, with Strategic Wargames Series on the cover.

The game takes place on a portion of East Falkland stretching from San Carlos Bay to Stanley. You can allocate the ships of the Task Force to supporting gunfire or protection of the Task Force. Your fifteen units must take on the twenty defending Argentine units and



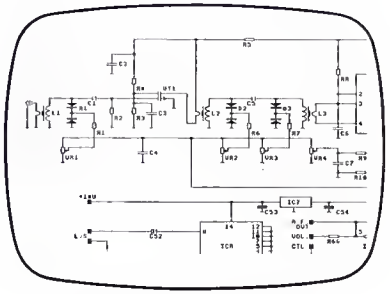
liberate the various townships on the Island.

No arcade sequences, and the manual read rather well, but loading the game brought great disappointment — the map is all on one screen, and the units are tiny. You can only move in four directions, whereas wargamers have been using hexagonal movements for years, leading to 'choking up' of units as they block each other off. Again a very good idea for a wargame has been let down by poor programming.

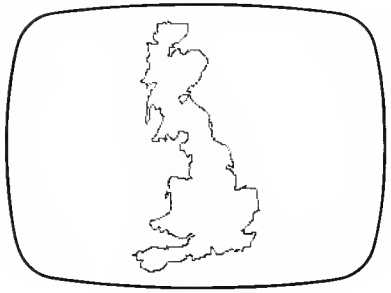
No doubt you'll be hearing more from me as new titles appear but until then I'm back to the adventure page — once I've driven the Germans back to the Rhine. ■

HIGH-RES GRAPHICS AT LOW-RES PRICE

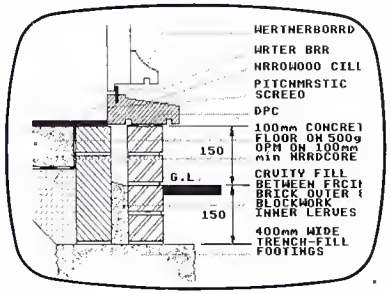
FREE-HAND DRAWING ICON SOFTWARE



ELECTRONIC CIRCUIT DESIGN WITH CIRKWIK



USING GRAFPAD FOR TRACING



ARCHITECTURAL DESIGN WITH DDX SOFTWARE

GRAFPAD II–

THE ULTIMATE IN GRAPHIC INPUT DEVICES

FOR THE BBC, COMMODORE AND AMSTRAD MICROS

The first low-cost graphic tablet to offer the performance and durability required for business, industrial, home and educational applications. It's small, accurate and reliable. Needs no adjustment or preventive maintenance. **GRAFPAD II** is a unique product that brings the power of modern technology under the control of the user.

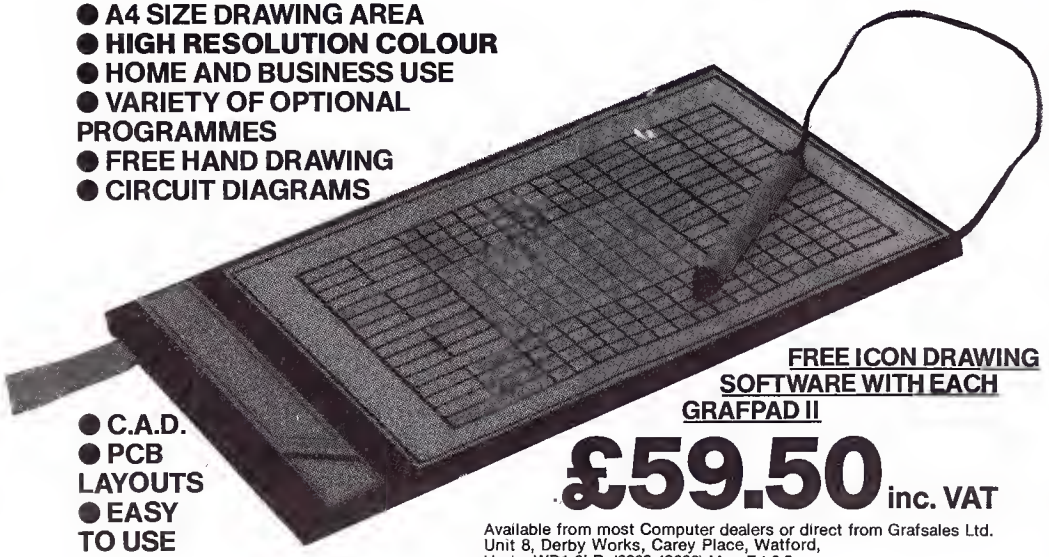
GRAFPAD II:

- A brilliant British invention manufactured in Gt. Britain, unequalled in the world of graphics input.
- Ferranti's space age technology makes the Grafpad II unique in its digitising technique.
- The culmination of 3 years of advanced research to create a final graphical solution for the world computer market.

IT COMBINES IN ONE DEVICE ALL THE FACILITIES OF PREVIOUS ATTEMPTS AT INPUT DEVICES. THE APPLICATIONS ARE AS NUMEROUS AS THAT OTHER COMMONLY HELD DEVICE–A PEN!–AND INCLUDE:

- Option Selection
- Form Input
- Data Collection
- Logic Design
- Circuit Design
- Picture creation
- Picture storage
- Picture retrieval
- Construction design
- C.A.D.
- Text Illustration
- Games
- Pattern Design
- Education
- PCB Design

- **A4 SIZE DRAWING AREA**
- **HIGH RESOLUTION COLOUR**
- **HOME AND BUSINESS USE**
- **VARIETY OF OPTIONAL PROGRAMMES**
- **FREE HAND DRAWING**
- **CIRCUIT DIAGRAMS**



- **C.A.D.**
- **PCB LAYOUTS**
- **EASY TO USE**

FREE ICON DRAWING SOFTWARE WITH EACH GRAFPAD II

£59.50 inc. VAT

Available from most Computer dealers or direct from Grafsales Ltd.
Unit 8, Derby Works, Carey Place, Watford,
Herts, WD1 2LR. (0923-49222) Mon-Fri 9-5
Sat 9 — 12.30

SPECIFICATION

Resolution:
1280 x 1024 pixels

Repeatability:
1 pixel

Output rate:
2000 co-ordinate pairs per sec.

Interface:
parallel

Origin:
LH corner or selectable

Dimensions:
350 x 260 x 12 mms.

EXPORT AND DEALER ENQUIRIES WELCOMED

TO: GRAFSALES LTD.
Unit 8, Derby Works, Carey Place, Watford,
Herts, WD1 2LR. Tel: (0923) 48222: Telex 946024

Please supply____GRAFPAD(S) II for *_____MICRO
at £59.50 plus £2.50 p&p *Please indicate for which machine.

NAME: _____

ADDRESS: _____

_____

_____

Cheque enclosed value £ _____

You can pay by credit card or telephone your order

Visa			
Access			

CH3

Digital music making

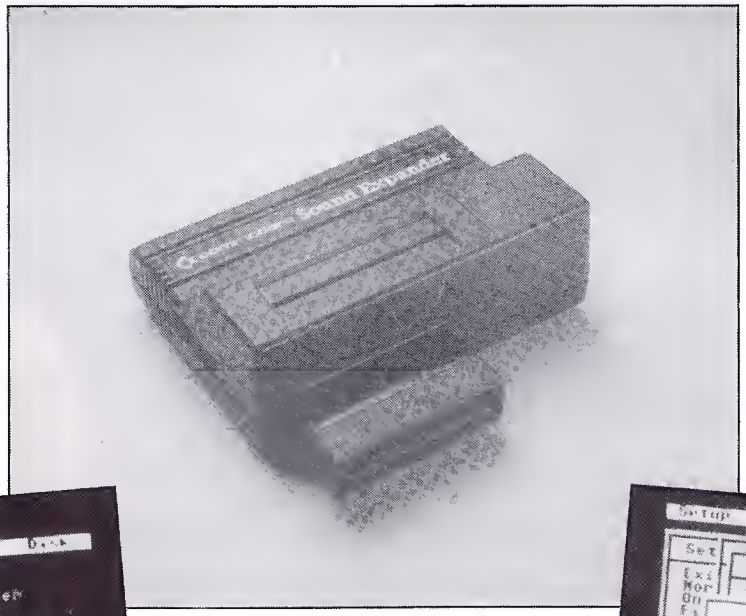
Commodore's FM sound expander gives your 64 the power of a professional synth

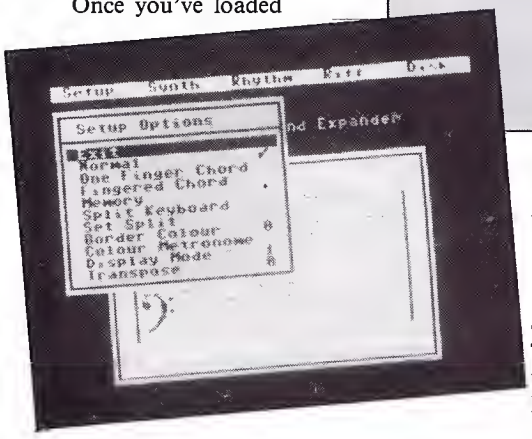
THE SOUND EXPANDER does for the 64 what Yamaha's tiny synth module did for their CX5 Music Computer, turning it into a fully-fledged polyphonic synthesizer with very high sound quality. And there's no real substitute for hearing the sound Expander, because it is quite unlike any conventional add-on voice unit.

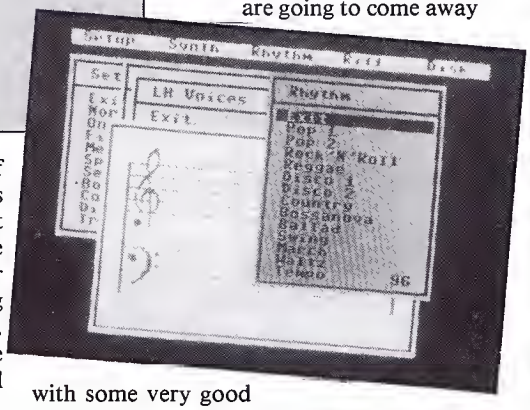
FM sound generation has revolutionised the world of commercial synthesizers with a new generation of clean, digital sounds, and the Sound Expander gives the 64 eight voices based on FM techniques. In fact Music Sales are buying in their FM chips from Yamaha, who hold a worldwide license on the technique.

The basic software on disk is rather simple, although there's more to come and these further packages will no doubt make the Sound Expander more useful on a professional level. The intitial package is of the "Play-Along" variety, and can be controlled either from the popular Music Maker clip-on keyboard (now available separately for £9.99) or from a full-sized four-octave keyboard of Italian origin costing around £69.

Once you've loaded







the disk and hooked up the phono output to a hi-fi (you can use a special lead to connect to a TV's video input if preferred) you're presented with a main page with various playing options — normal or single finger chord playing, octave transposes (vital if using the Music Maker keyboard), Ensemble On/Off for richer sounds limited to four-note polyphony, Chord Memory, Programmable Split point, Border and so on.

If you do choose to create a split point there's a separate "Lower Half" menu giving the same choice of sounds — Brass, Electric Piano, Organ and so on, all having the very high degree of life and realism associated with Yamaha's FM synthesizers such as the DX9. Obviously many users will be more than happy just to play the Sound Expander as a normal synthesizer, although there's little control over the sounds except for an overall Brightness adjustment.

If you do want to become more ambitious, there are twelve rhythm accompaniments available, each with their own arrangement of bass and arpeggio patterns. The drum sounds are very life-like, although again there's little programmability available — perhaps this is to come. The software also has a section originally known as "Riff Machine" which includes a couple of complex demo tunes but which also allows you to program your own chains of preset sequences. All you have to do is tap in the sequences from the computer's 1-10 keys (or on the Music Maker keyboard if you're using one) and the software arranges them for you. The riffs are written so that they'll combine well in almost any order — it's a musical Lego set.

Lego has its limitations though, and while the Riff Machine is impressive in operation, its appeal is likely to wane after a few goes. In February, however, Music Sales hope to be delivering an FM Composer package which will allow you to create you own pieces using up to eight different monophonic sounds simultaneously, rather like the Yamaha CX5 software.

One advantage of the existing Sound Expander software is that it could act as an educational aid. All notes played on the keyboard are shown on a screen display representing a music stave, and presumably this display will be further exploited in the forthcoming compositional software. You can change the display mode to show either sharps or flats and there's also an option of flashing the border colour as the auto accompaniment feature plays — a sort of miniature light show.

The Sound Expander is impressive as a basic preset musical instrument — even the cheapest decent keybaord instrument costs four times more, assuming you already own a 64 — but its accompaniment facilities (while useful) are more or less for the keyboard beginner.

What's more exciting is the prospect of what Music Sales have lined up for the not-too-distant future. The Sound Expander module has a follow-on cartridge port and this will accept an input from a forthcoming touch-responsive keyboard. It's also planned to design a Sound Creation package which will allow you to define your own FM sounds from the ground up. Reading University's Microtech department is collaborating on software development, initially to make sure that it is suitable for education applications, and a pilot scheme is now running in seven schools.

The students on that scheme are going to come away with some very good basic ideas on FM sound, a handy split-keyboard musical instrument, and either a deep respect or an eternal loathing for one-finger chord, bouncy automatic bass-lines. It's worth checking out the Sound Expander to see exactly what you could get out of it. ■

Product: FM Sound Expander
Micro: CBM64, 128 in 64 mode
Supplier: Commodore,
1 Hunter's Road,
Weldon North Ind. Est.,
Corby, Northants.
0753-205555.
Price: £99.

A Flash Of Genius!

THE NEW 64 MULTIMODEM

GIVES YOU DATABASES, BULLETIN BOARDS, ELECTRONIC MAIL, PRESTEL — ALL ON YOUR COMMODORE 64 OR 128

At last! The perfect modem for your Commodore* 64 or 128, giving you access to Prestel*, Micronet*, viewdata and a host of other services — plus user-user communications.

It couldn't be simpler. The 64 Multimodem has autodial and autoanswer, with all comms software on-board in ROM. 64 Multimodem fits your Commodore's cartridge port, and has just one external connection — the telephone lead.

The 64 Multimodem is menu driven and multispeed, with CCITT V21/23 and Bell 103 standards, handling baud rates of 300/300, 1200/75 and 75/1200.

Functions include save and print frame and automailbox with edit and save.

Buy your 64 Multimodem now and we'll give you free introductory subscriptions to Micronet and Microlink*: an unbeatable package at an unbeatable price — it's pure genius!

£98·50 (exc)

PROHIBITED from direct or indirect connection to public telecommunication systems. Action may be taken against anyone so connecting this apparatus.

Approval applied for

*reg'd trade marks of the companies concerned.

send to:
Commodore Support, Miracle Technology (UK) Ltd.,
St Peters Street, Ipswich IP1 1XB.

please flash me ☐
64 Multimodem/s
@ £116.15 (inc VAT & UK delivery)

I enclose cheque/postal order/
please debit my Access/Visa

card no:.....

Name.....

Address.....

.....

Postcode.....

VISA

From the Communications Powerhouse

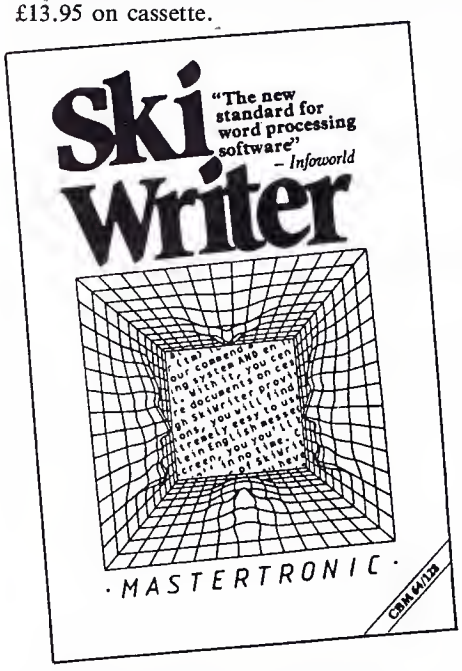
MIRACLE TECHNOLOGY

MIRACLE TECHNOLOGY (UK) LTD ST PETERS STREET IPSWICH IP1 1XB ENGLAND
(0473) 216141 6 LINES TELECOM GOLD 79: KEY 001 (Dealerlink 72: DTB 10135)
946240 CWEASY G 19002985 PRESTEL MAILBOX 919992265

More words per pound

Mastertronic looks set to turn the utilities market on its head with a new budget range. ***Ken Matthews*** *tries the Ski Writer word processor*

MASTERTRONIC has been developing a name for high-quality budget games software over the last year. Now they've taken a step into the utilities market, and acquired the rights to Ski Writer, a word processor originally sold in the USA for $70 and released here for a paltry £14.95 on disk or £13.95 on cassette.



Written by Ken Skier, who helped develop both the Wang word processor and the Epson H120 computer, the Ski Writer has received wide acclaim in the USA and claims to be so user-friendly you don't even need a manual. This also helps Mastertronic to keep the price down!

Using the sound logic of letting idiot proof software be tested by idiots, I was handed a disk and told to produce the words you see before you . . .

'High-quality', "a gem", "I was amazed at its speed" enthused the American reviewers, and I must say I agree entirely. I felt at home with the program as soon as the main menu appeared, and had fallen for its charms a few hours later.

Most important for the new user, help is just a keypress away; the instruction screens give clear, simple instructions to get you started. If you've used a different word processor before, the new user section will show you the main differences and points you to three sample files to illustrate features of the program. You can never change the background and type colours to find a combination that doesn't strain your eyes.

The program is so easy to use that you can just enter EDIT mode and type away. Each feature of the program, edit, format, preview, print and file has its own help function to help you pick things up as you go along. Underlining, custom layouts, word search and replace, move text etc. etc. are all there for you to experiment with, as you please. The sample files provide worked examples for easy reference.

Formatting is a breeze, and allows the user to make all sorts of changes within the text itself by use of what the program calls 'dot lines' which are short commands that begin with a full stop. You can use dot lines to set margins and page length, spacing of type, headings and comments which don't appear in the text. These features will produce a very professional looking document.

Preview

To save you time and paper the Preview function lets the user see just hnow the work will look when printed out.

Getting down to the printout itself, the Ski Writer supports the full range of Commodore printers and many other popular makes, although you may need to refer to your printer manual to answer some of the questions the Ski Writer asks you when setting up ready for your particular machine.

You can save your works to cassette or disk as you choose, but obviously disks were designed with this sort of task in mind and prove a lot more flexible in handling files. The software will handle formatting or deleting for you, and even arrange your files into alphabetical order. The MERGE facility means you can combine several files into one large document or insert parts into other work.

There's really not much more to be said. If you are taking advantage of Commodore's special printer offers, and you've any type of paperwork to produce, Ski Writer is the ideal word processor for beginner or hack alike — just pop it in the drive and away you go! It would be a bargain at double the price.

Ski Writer is the first of a series of utility programs from Mastertronic, who hope to do the same in this field as they have in the games market; make a success of offering inexpensive, quality software with no frills, and selling in vast quantities to make up for the decreased profit margin. Major retailers such as Boots have already expressed interest in the Ski Writer package, and the forthcoming database and spreadsheet programs. It seems that Mastertronic will once again stir up the market just when it seems that all the other software developers are giving up on the 64. ■

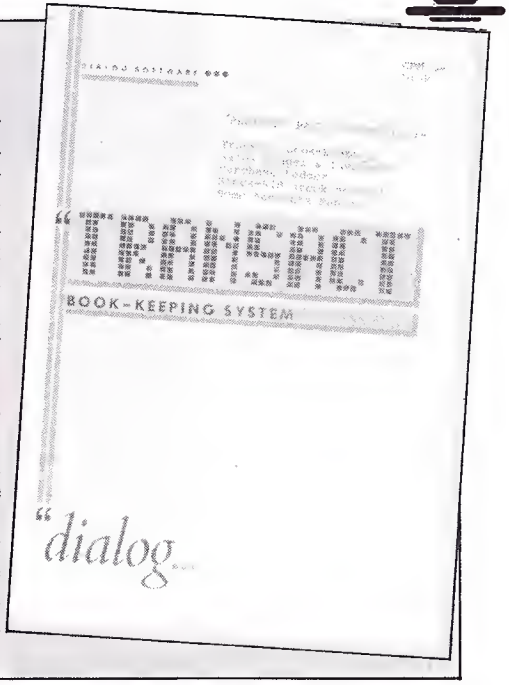
Program: Ski Writer
Micro: CBM 64
Supplier: Mastertronic, 8-10 Paul Street, London EC2, 01-377 6880
Price: £13.95 tape, £14.95 disk

File handling

NO ROOM here for more than a brief mention of a specialised accounts program from Dialog Software. The **Transact** Book-Keeping System includes sales ledger and invoicing, purchase ledger, stock control and home accounts sections, and comes on disk for the 64 with a separate manual for each section.

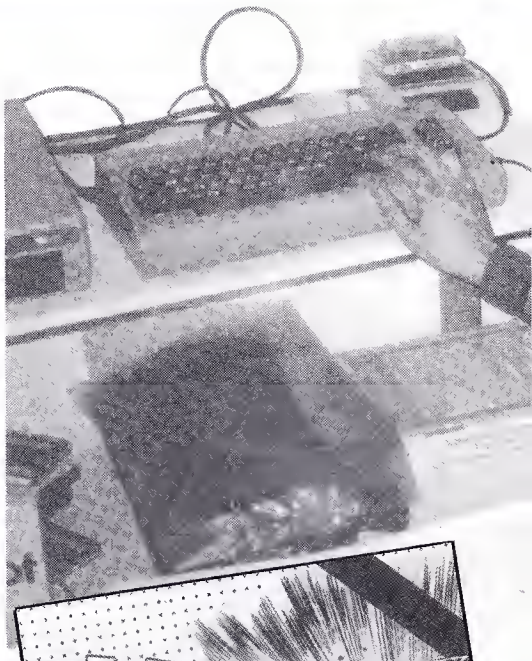
Transaction Files emulates the manual entry books, and has optional VAT routines. The accounts File acts as a Nominal Ledger, and can cope with 100 accounts. Full software support is available to registered users.

The complete package costs £75, which Dialog claims is a saving of £79.75 on the cost of each program separately. There is also a cassette version available, and a similar offer is being made for Dialog's Plus/4 range of programs. For more details contact DIAlog Software, 20 New Row, London WC2N 4LA, or phone 0371 831009. ■



Profile

Rob Hubbard — the master of micro music



Tony Reed travels to Newcastle to talk to the man whose music programming has squeezed sounds out of the 64 which shouldn't be possible with SID!

IT'S NOT original to remark upon a similarity between the world of top games programmers and the world of pop music — both with their charts, their overnight success stories, and their sudden failures. But the particular case of Rob Hubbard fits the cliche better than most. Uniquely amongst UK programmers, he has made his name, not through writing the next big thing in platform/arcade/adventures, but in writing the music accompanying them. And what music it is: on bestsellers like Gremlin's **Monty on the Run**, on **Commando** from Elite, or Martech's **Crazy Comets**, the 64's poor little 3-voice SID chip suddenly brings forth great-sounding 5 or 6-part, original music, doing things you never though it could. Hubbard's name on a game these days is a virtual guarantee of a great soundtrack. (though not necessarily of anything else.) So how does he do it? Quickly, apparently...

"...Anyway, I got a call from Elite the Wednesday evening, they dragged me down to Birmingham on the Thursday, plonked me in a hotel room with a machine and a really terrible monitor at about 10 o'clock in the morning — and I finished the music for Commando at about 8 o'clock the following morning. I still haven't seen the version that's gone on sale!"

Commando

Rob's native Yorkshire burr is overlaid with a Geordie twang, the result of spending the last nine of his thirty years to date in Newcastle (though continuing success makes an early move to London ever more imminent...)

"That's about the fastest, start to finish, that I've ever done. I'm still quite pleased with the main theme, but the Hi-Score tune, which I wrote at 4 in the morning, really *sounds* like the kind of thing you put on at a party at 4 o'clock in the morning!"

In the case of Commando, Rob was at least shown a demo version of the game. Sometimes, he's not even that lucky:

"I'm working on one at the moment, provisionally called **Master of Magic**. It's being written by Richard Darling for Mastertronic, and all I know about it are the three adjectives he used to describe it to me over the phone: 'Sorcery! Wizardry! Medieval!' Not a lot to go on, but it's musically the most complex thing I've done so far."

Given the opportunity, though, Rob usually takes about two weeks to complete a 'soundtrack':

"Off and on, not working continuously. I usually get up, chuck some coffee down me neck, switch everything on, and stick at it until my brain starts coming out of my ears. I go to bed for an hour, have something to eat, watch a couple of hours of garbage on the TV, and stagger back again — sometimes for 12 or 14 hours a day, if I'm not gigging with my band." (Rob manages to fit a little ivory-tinkling with a local club band in between hacking sessions.)

The more time Rob gets to work on a program — and, more importantly, the earlier he becomes involved in the writing of it — the more 'integrated' the results tend to be, as his work on forthcoming Firebird game, **Gerry The Germ**, demonstrates. Rob was supplied with a 'cheat' version which let him see all the screens ("Just as well — I'm useless at games — when I was working on **Thing on a Spring** I managed to doctor it to make it easier for myself — and I could still only get a couple of thousand points!")

Gerry The Germ, which involves travelling around inside a human body, has afforded Rob the opportunity for some pretty disgusting sound effects (watch out for the Bladder and Bowel) and effective audio/visual links (i.e. a stunning 'train' sequence complete with whistle, and the clack of wheels over track.)

"Basically," he explains, "You have to take your pick — either you have a 'soundtrack' running all though the game, with maybe a few effects thrown in at the right moment, like the motorbike noise in Commando, or you have sound effects for every little thing that happens, and no music. Usually, you only have about 5K for all the music and sound effects anyway. I think most room I've ever had was 6K, and I have squeezed into 3K before now, so you have to be choosy...In Commando there is so much happening on screen all the time that if you had sound effects for all of them, there wouldn't be any point in having any music...I generally do both music and sound effects, though, despite the fact that people seem more interested in the music now, so at least the client has the choice if they want. It varies from job to job — on **The Human Race** for Mastertronic, all the 'jungle' noises and sound effects had already been written, which left me with only two

voices to do the music with. It was like doing it with one arm behind my back!"

"To be quite honest," he adds, "I think too much emphasis is put on sound effects, especially in reviews. Clients say to you: 'O.K. I want an effect for the bit where the arm drops off and hits the bottle.' Now, what are you supposed to do about that? If the result doesn't sound right, then the reviews'll give you a slagging — which is missing the whole point. Of course with things like explosions or bullets, it's easy to make it specific, but generally I think it's preferrable to keep things loose.'"

A relative latecomer to computers, Rob was until about four years ago, keeping things very loose, plying his trade as a professional musician, turning the skills gained from a lifetimes' playing and three years at music college to a variety of musical jobs: "I've arranged for string quartets and pub-rock groups, worked as a musical copyist, and even pushed a knackered Transit full of band gear through waist high snow at 4 o'clock on a January morning!"

Tyne Tees TV are currently filming Rob's 'concept musical' **Work**, 'About life, society, and the whole bit, y'know?', but it is now computing which offers him his most satisfying — and lucrative — creative labour. Ironic, since Rob bought his first machine to keep abreast of the impact he could see computers having in music. He *was* considering the now-forgotten Memotech (How history would have been changed if he'd bought it...) but when the price of the C64 dropped that first time to the £230 mark, Rob, intrigued by it's musical facilities, took the plunge.

Competition

"I was completely self-taught, starting off like everyone else with Basic graphics routines, but the great thing about the 64 is how it encourages you to get into machine coding. I think I wrote my first machine code routine after about two months."

From the very start, Rob had an eye on the commercial applications of his new hobby.

"At the time, about 3 or 4 years ago, the games boom was at its height, and there was no decent educational software about at all. So I wrote two or three music tuition programmes — Pitch training, sight reading — and sent them out to companies. No response.

"Then it occured to me that there were specialist graphics programmers — why shouldn't there be specialist music programmers too? That's when I decided to *get in there*. I guess my breakthrough games were **Confuzion** and **Monty**. Since then, I haven't had to look so hard for work." He laughs.

Does he ever worry about the whizzkid competition, I wondered?

"As far as music is concerned — not really. There are a couple of people I respect — the guy from Ocean who did **Hypersports**, the American kid who did **Master of the Lamps** and Activision's **Rock 'n' Bolt**...He's good. But I broke into the games to see how he did it — if you've got a machine code monitor and enough patience, then you can break any Turbo — and, from what I can gather, his coding is really inefficient — he just treats the music like any other data, loads all the information each time for every sound, which uses up bags of memory. The system *I've* developed is very efficient. Musical data — pitch, duration and so on — goes in on one routine, and the actual sounds on another."

One of the strongest features of Rob's best work is the way in which the music enhances the atmosphere of a game — listen to his sombre theme for Martech's **Zoids** and you'll see what I mean. Does his musical training help?

. "On occasions. One of my early games seemed to called for a 'hillbilly' feel, so I went out and got an album of Bluegrass fiddle music, and a couple of song books..." (Rob played me the result, complete with finger-pickin' banjo and stunningly realistic howdown fiddle. I was, ahem, impressed)"...or, for instance, on **Master of Magic**. I've been looking at a few medieval scores to help with the feel. In general terms, though, It's fairly obvious what to go for. One of the games I'm working on should be out in time for Christmas, so I've made all the tunes in it Christmassy."

Does his own taste in music influence what he writes?

"My tastes are very wide, but I make a point of listening to the Top 40 every week. After all, most of these games go to young kids, so what's the point of putting in some obscure classical piece? They need to hear something they can relate to...One of my favourite tunes, **Crazy Comets**, was a sort of compromise between New Order, who I really like, and a typical funk thing using a sort of 'Slap-bass' sound...it all depends. Sometimes the tunes are totally original, sometimes, if inspiration doesn't strike, I adapt things, change them, make them my own. **Monty** was like that — it started out as the theme from the old radio detective show, **Dick Barton!**"

Rob draws the line though at the recent rend towards direct transcriptions of arcade game tunes, or hit records: "I mean, what's the point? If you want to hear **Relax**, put a record on. I felt really sorry for Tony Crowther over **View to a Kill.** When People have heard something so often, they're bound to be disspointed by a computer version! It's the same with the arcade games. They're very good in a way, pushing programmers to get as much as possible out of micro adaptions, but you have to be realistic. Those machines hav six or seven dedicated sound channels — you can't compete with that, you have to adapt, and get the best you can out of *your* machine." And how, since you mention it, do you do that? He laughs. "Its taken me long while to develop my routines, and I'm not about to give them away!" (Rob hinted that one company which had made free with one of his demo disks might shortly regret having lifted his routines!)

"Mind you, there are some general points that people might be interested in: I think the key for me was understanding how interrupts work — ninety-eight percent of all games work on raster interrupts. I just make sure my music routines are run from them. Obviously as time's gone on, I've built up a little set of routines which let me do everything a lot more efficiently and quickly. I like pitchbend,

and use it a lot — a routine I developed while working on **Monty**. I also like things to sound rich, not wimpy: I've got two pulse width routines, short and long, and a vibrato routine — between them, you can get some great sounds. Ring Mod and Sync are about the most versatile things on the SID chip though — hard to use, of course, because they take two of the voices, but they offer the best chance of getting distinctive sounds." (My personal favourite is the very modern 'metal' clunk which punctuates the **Zoid**s theme. Depeche Mode, watch out.)

Tinkering

"I soon worked out that as long as you keep **something** going — the bassline, or a bit of percussion — you can 'steal' the other two voices for a quick effect or impressive noise, without interfering with the music. On something like **Commando** I've taken it to ridiculous extremes — there's barely a moment when the voices rest — voice 1 carries the tune, with the second and third voices flitting all over the shop doing different things...though the impression of so many voices playing at once is helped by proper musical arranging as much as being a whizz at programming."

Could you describe the composition of a piece from start to finish?

"Usually, I start by tinkering around with that," he indicates a battered, and very basic Casio portable keyboard. "It's a bit of a dinosaur, but it does the job, and it's dead portable. Or, I'll start by sketching a few ideas out on manuscript instead. The bassline goes down first usually, and maybe a bit of percussion. Once I've got a four bar riff worked out — and on bad days, that can take a long while — then I bung it into the machine, just looping round, and start to develop a little melody on top, adding it in while the bassline is still running. That's when. I start experimenting with sounds too, using a big Master Source Code File I set up which can be edited while the patterns' running. Some of by best sounds, like the little 'voices' in the **Zoid**s theme have come about from tinkering, happy accidents which I hang onto; but obviously, having had a lot of experience of synths and things, I've got a good understanding of ADSR, Ring Mod, and so on... if I've got an idea for a partiular sound in mind, I usually know how to go about getting it...

"With the basics worked out, it's a matter of beefing it up as it goes along, using available 'gaps' to steal two voices for a moment."

Utilities

Results are monitored over the 'typical punter system' he uses for all his work. No technoflash here — just a spartan little room, a 64, disc-drive, and a little black and white TV. Sometimes, he'll try it out through his (perfectly ordinary) hi-fi; and that's it.

"It's like in a recording studio, when you listen to the final cut over tiny monitors — if a track sounds good *then*, you know it will when people play it at home."

The spartan approach exends to programming aids: "I've got a couple of Turbo loaders the disc drive, and Andrew Trott's Assembler package, but that's about it...I was very impressed with the Orpheus **Electrosound** music utility — with that, someone who knows what they're doing should be able to put me in the dustbin."

Had you ever considered a music utility yourself?

"No, because I can't think of any way to make my methods accessible enough to the average punter to make it worth while."

Amiga

What about the future? "Of course, as a programmer and a musician, I'm very keen to get my hands on an Amiga — "Fairlight compatible", 4-channel stereo — I'm trying to get as much technical information as I can about its sound chip right now...As far as the 64 goes, I'm probably going to carry on with Mastertronic: they now pay me over five times per game what I started out getting! But I'm also keen to do other things.

I can now get the SID chip to do more or less anything I want, I don't think there's anything more *soundwise* I can do with it. The next thing would be an absolute monster game, with 10 or 12K set aside for sound, featuring very close synchronisation between sound and action, like a cartoon. I've made contact with a very bright young programmer in London who's keen on the idea too — something like a Tom and Jerry cartoon perhaps. I can hear the music for it now..."

I hope it's not too long before we do. Thank you, Rob Hubbard — the first Commodore 64 pop star.■

C16/PLUS 4
CENTRE

HUGE SELECTION OF SOFTWARE
NEW TITLES ADDED EVERY DAY
DUST COVERS/
EXPANSION PACKS/BOOKS
IN FACT EVERYTHING TO DO
WITH C16/PLUS 4

SEND S.A.E. FOR OUR DESCRIPTIVE LIST
PAYMENTS BY VISA ACCESS P.O. CHEQUE
POST AND PACKAGING FREE U.K. MAINLAND/OVERSEAS £1

ANCO MARKETING
85 TILE KILN LANE
BEXLEY, KENT
Tel: (0322) 522631

TOOLKIT IV
1541 DISK UTILITY
COMPLETELY NEW – INCLUDES ALL THIS . . .

DOCTOR V2 – allows you to read and write eny treck or sector, including extra end renumbered trecks, extre and renumbered sectors, end looks underneath READ ERRORS. Repairs damaged sectors.
FORMATTER – formet en entire disk, or formet any individual treck or half-track from track 0 to 41. Redefine any of 30 peremeters including trecks per zone, sectors per track, bit density, dete block size, dete block fill bytes, header end data block id's, header end teil geps, off-bytes, syncs etc. This allows you to creete or recreete e completely unique disk format; and it formats an entire disk in less than 10 seconds.
HEADER/GAP EDITOR – decodes end displeys ell header information including off-bytes, checksum end heeder gep. Rewrite the entire header end heeder gep. Renumber sectors. Also edit eny sector tell-gep.
ERROR LOOK – the festest, most thorough error detector ever gives you ell necessery perameters for becking up, detects ell errors, extre end renumbered sectors, extre end renumbered trecks, helf-trecks, from treck 0 to 41.
ERROR MAKE – meke 20, 21, 22, 23, 27 end 29 reed errors on eny individual track and sector and redefine eny necessery peremeters, end even recreete data under the originel error. Also includes e method of preventing your disks from being copied by most disk copiers.
FAST DISK COPY – copy e full disk with one drive in less then two minutes. Copy e pertially filled disk in even less time.
FAST FILE COPY – trensfers files over five times fester then normel, loading and saving.
COMPACTOR – will compect eny mechine code progrem. Can compact files by 50%: seves disk spece end loeding time.
DISK LOOK – the ultimete directory and file manipuletion utility. Sort the directory in eny wey you like. Edit DOS version. Displey file start and end eddresses. Disassemble any file with standerd and unimplemented op-codes. Edit BAM. Unscretch files. Plus more . . .
DRIVE SPEED TEST, DISK ERASE, DISK MON, DISK LOG, BASIC COMPACTOR/UNCOMPACTOR, &: FILEMAKER, make your 1541 pley the netional anthem, or increese drive heed speed end still more thet we cen't squeeze into this ed (end even e few little surprises we eren't telling enyone about).
TOOLKIT IV is undoubtedly the most comprehensive disk utility eveileble for the 1541 drive, yet it couldn't be more user friendly. Supplied on disk with comprehensive instruction menuel. You will wonder why you bought those heevily edvertised, more expensive utilities.

FOR C-64 OR C-128 ONLY
BUY IT NOW – £22.95 (inc p/p and fast delivery)
Overseas orders please add £1.00

MPS SOFTWARE (DEPT CH)
36 ALEXANDRA GROVE
LONDON N4 2LF, ENGLAND
01-800 3592

Previous TOOLKIT owners can upgrade by returning their originel disk + £10.00

Is the C128's powerful new programming language enough to make it a more attractive prospect for the student of Basic? ***Tony Harrison-Smith*** *looks at Basic V7.0*

C128 – basically better?

MANY CLAIMS have been made for the proramming power of the Basic 7.0. Are they justified? Over the next two months I will try to give you an idea as to whether they are true.

The C128 has three modes of operation, C64, C128 and CP/M mode. At this point may I digress and dispel rumours that CP/M will not run on the 1541 disk drive. The CP/M mode will perform ALL functions on the 1541 disk drive, even if it is at a slow speed. Having cleared up that rumour, back to C128 mode!

Increment

To aid the writing of programs, the C128, Basic V7.0 has a few extra commands: AUTO, DELETE, HELP, KEY, RENUMBER, TRON AND TROFF.

AUTO will switch on or off an auto line numbering facility. This is very useful for the fast entry of programs. When using auto, the line number increment is set by the programmer to whatever value is suitable. A useful feature of this command is the ease at which a set of lines can be duplicated. Display the lines to be copied on the screen, switch on the auto line numbering and then renumber the first line to the new line number. When you Press return to store the line, the next line on the screen then displays its new line number ready for you to press the return key. There is an anomaly with the auto command if you are using auto to enter some lines between existing line of basic. When auto comes to an existing line it does not display the line's contents to warn you that you are overwriting it.

DELETE allows the deletion of lines of program from memory. The start and finish lines for deletion can be set by the programmer. Using this command is obviously a lot easier and quicker than typing in each line number and pressing return.

KEY is one of the most time saving commands that has been added to aid programming. This command allows you to redefine the function keys, though this may not seem very useful at first glance. Use the command to reprogramme the function keys to most often used keywords or phrase. A lot of time will be saved by using the single stroke function keys to print a string of characters. Key has another function as well. If you just type in "key" and press the return then all the function keys and their assigned variables will be displayed.

RENUMBER is the last of the program entry aids rather than debugging aids. Renumbering a program has two benefits; the first is that the program will look neater. the second benefit is that renumbering creates space for insertion of extra laines. The renumber command allows either all the program to be renumbered or part of the program starting from a specified line. The new starting line number and the increment between the lines are set by the programmer. A word of warning; before renumbering always save the program. If during the renumbering the line numbers exceed 64000 the system may crash. If you have a large program then switch the C128 into fast mode for renumbering as it can take a long time to renumber. For the correct way of doing this see section 17, page 64 of the system manual.

HELP is the first of three debugging aids. If a program stops with an error message, then either press the help key or type "help" and press return. The help function will display the line the error was found in, and highlight where the error was found.

TRON and **TROFF** are two commands used for switching on and off the trace function. It is possible to trace a whole program, but I do not recommend this as every time a line is executed the line naumber is displayed on the screen destroying the screen layouts. The best way to trace a problem is to insert the commands into the program just before and after the suspected area.

Structure

This next section covers improvements to the BASIC for 'standard' programming, that is, not sound or graphics, which will be covered later. There are many new commands in this field but they can be broken down into three areas; Disk, Structured and Programmer friendly commands. I will cover each area separately.

Disk commands have been aded to the C128 because if you do not have a disk drive then you will under utilise the C128 by about 50%. As an example of this, there is about 55K of memory available for BASIC programs (variables are held in a separate memory area). Imagine how long the tape would take to load a 55K program, even with turbo loading! The disk commands added are the standard BASIC 4 type commands such as DLOAD etc. In total there are nineteen new disk commands available for use. These commands cover auto loading to relative file handling and disk house keeping.

Adamsoft Special Offers

Commodore 64 Software on Disk

Firstbase + Firstword + Powerplan **£56.95** (save £60)
Basic-64 Compiler + Assembler Monitor **£34.95** (save £20)
Chartpak-64 + Busicalc I **£34.95** (save £10)
Cadpak-64 + Videobasic-64 **£49.95** (save £20)
Zoom Pascal + Assembler Monitor **£24.95** (save £20)
Ultrabasic-64 + X ref-64 **£19.95** (save £10)
Synthy-64 + 3 Music Disks **£14.95** (£12.50)
Anatomy of 1541 Book + Super Disk Utility **£14.95** (save £6.50)

Special Offers on 1st Books

Machines Language Book + Advanced Machine Language Book **£9.95**
Anatomy of the C64 + Tricks & Tips + Cassette Book **£16.95**

Hardware Offers

Commodore 128 + 1570 Disk Drive + 10 Disks **£449.00**
Commodore 128 **£269.00** 1570 Disk Drive **£199.00**
1541 Disk Drive + Anatomy of 1541 Book + 10 Disks **£149.00**
1541 Disk Drive + MPS801 Printer **£199.00**
MPS 801 Printer **£99.95**
Free delivery within the U.K.

Commodore-16 and Plus-4

Send 12p or 17p stamp or sae (min 8½" x 4") for a free copy of our new 16 page catalogue of games, utilities, books and hardware.

Payment by cheque/P.O., Access Card, or Transcash (a/c 687944007)

ADAMSOFT (Dept CH),
18 Norwich Avenue, Rochdale, Lancs. OL11 5JZ.

Tel: 0706 524 304 (inc evenings)

MIDLAND COMPUTERS LIBRARY

ATTENTION COMMODORE 64/128 USERS

A SUBSIDIARY OF PLATINUM GOLD

* **OVER** 4,000 different titles available for hire for the **COMMODORE, SPECTRUM, BBC, AMSTRAD, ATARI**, and **MSX computers.**
* **ARCADE, ADVENTURE, EDUCATIONAL** and **BUSINESS** software too.
* **HIRE PRICES** from only 75p **INC. P&P.**
* **20% DISCOUNT** off all purchase software.
* **FREE CATALOGUES.**
* **FREE HINTS AND TIPS.**
* **FAST RETURN OF POST SERVICE** (if reserves are given).
* **ALL GAMES** manufactures **ORIGINALS** with full documentation.
* **OVER** 6,000 satisfied members.
* **EUROPEAN** members welcome.
* Fully computerised system keeps track of your order. We pride ourselves in being the most professional Hire Library in the United Kingdom, with staff of 14 who knows what the word service means. Backed by our own software company and programmers.

MIDLAND COMPUTER LIBRARY
28 College Street, Worcester WR1 2LS. Tel: 0905 611072
Please enclose £6 for Life Membership or send a SAE for free catalogue stating machine.
Name: .....
Address: .....
.....

128

If you're as impressed as we are with the new Commodore 128, you'll be even more impressed with the new software that's appearing for it now! Already we've got SuperBase 128 (~~£99.95~~ £85.00!), SuperScript 128 (~~£79.95~~ £69.95!), and the amazing VizaWrite Classic 128 (~~£99.95~~ £89.00!)... so watch this space!

Although we are by far the largest UK retailer of SuperBase, VizeStar and VizaWrite for the Commodore 64, for over five years we have supported the best software for all the Commodore business machines! So if you have a CBM/PET 3000, 4000, 8000, 700 or PC, then don't forget us... we haven't forgotten you! Why not phone or write for our CBM/PET catalogue?

Superscript 64

All the features you'll ever need for professional word processing... and then more! Unrivalled 240-column text handling, variable width screen, word-wrap, cut-and-paste, four-way scrolling, document linking for unlimited capacity, global search-and-replace, help screen, full memory calculator, row end column arithmetic, menu or keyed commands with command strings, background printing, complete letter quality print control, spelling checker with both UK and US disk dictionaries, comprehensive four part user manual...

OUR PRICE ~~£69.95~~ £58.95! ...WHILE STOCKS LAST!

1st BOOKS

The Anatomy of A Commodore 64	£8.95
The Anatomy of the 1541 Disk Drive	£8.95
Your '64 Cassette Book	£8.95
Tricks and Tips for your '64	£8.95
Machine Language Book for the '64	£8.95
'64 Advanced Machine Language	£8.95
Peeks and Pokes for the '64	£7.95
Commodore 64 Idee Book	£8.95
Graphics Book for your '64	£8.95

SuperTYPE

Are you a two-finger typist? Then why not let SuperType help you learn to touch-type the last and easy way... with your computer as the teacher! All the family can learn this useful skill, at their own pace... and profit from the very latest computer-aided training and feedback techniques!

ON TAPE ~~£19.95~~ £16.95!
ON DISK ~~£25.95~~ £21.95!

Superbase 64

Transform your Commodore 64 into a full featured professional database system, with up to 1000 characters per record on up to four screens... and up to 128 items per record, definable as key, text, numeric, result or date... in files of up to 16 million characters! SuperBase 64 even has calculator and calendar functions, easy input from word processor or data files, both menu-driven and program control, sorting and searching, fully definable report and screen formats... Superbase 64 is essential if you want the most from your 64! Supplied on 1541 disk with excellent tutorial and reference manual, plus audio learning tape...

NOW ONLY ~~£79.95~~ £69.95!

Jetpack

Your programs will really take off with JetPack 64! 100% compatible with CBM Basic, Jetpack compiles Basic programs into machine code, running up to 25 times faster... using up to half as much memory! And it even accepts Basic extensions and machine code routines as well!

WHILE STOCKS LAST... ~~£39.95~~ £29.95!

1st BUMPER BUNDLES!

For a limited period we can offer amazing savings on top-quality books & software from First Publishing. Save £60 on Offer No.1 (FirstWord + First Base + PowerPlan) for only £56.95! Save £20 on Offer No.2 (Basic 64 compiler + Assembler Monitor 64) ...only £34.95! And save £10 on best-sellers Offer No.3 (Anatomy of the 64 + Tricks & Tips + Cassette Book)... only £16.85! Please allow 5 days' delivery.

VIZASTAR 64

Spreadsheet, database and graphics too... all integrated into one amazing package, at an amazingly affordable price! The very latest design techniques combine the ultimate in ease-of-use with all the sophistication of a fully integrated product... VizaStar's advanced features include high speed maths functions, large 1000 by 64 worksheet, programmability, windows, cell protection, search and sort, text editing, wordprocessor compatibility, simultaneous graphics... integrated with a 1000-character per record database, up to 250 characters per field... the only product of its kind for the Commodore 64! Suits most printers, supplied with excellent handbook. (XL8 version now available with a 40% bigger spreadsheet plus business graphics, ~~£129.95~~ £115.95!)

OUR PRICE (XL4) NOW ONLY £74.95!

VIZAWRITE 64

A high-performance, low-cost wordprocessor, with full on-screen formatting, that takes full advantage of the colour, graphics and memory capacity of the Commodore 64... that works with both disk and tape... and supports virtually any printer! With a concise and easy-to-follow user manual, VizaWrite is the ultimate personal computer word processor! (Available with VizaSpell, a 30,000 word disk dictionary and spelling-checker, for ~~£99.95~~ £85.00!)

VIZAWRITE (DISK) ~~£79.95~~ £67.95! (CARTRIDGE) ~~£89.95~~ £78.95!

SuperBase Starter (SAVE £10!)	29.95
SIMON'S BASIC (SAVE £15!)	35.00
MASTER 64 (SAVE £30!)	39.00
JETPACK (TAPE)	14.95

EasyScript to SuperScript upgrade- send disk and manual cover	44.95
SuperScript to SuperScript 128	57.95
SuperBese to SuperBese 128	67.95

WANT IT TOMORROW??? CALL US TODAY!!! ON 01-546-7256

Prices include VAT and POSTAGE and are correct on going to press. Order by post or phone, using cheque, Access, Barclaycard or postal order. Despatch is by same day 1st CLASS post. Product data available on request, or phone for advice if in doubt. [REF A35]

Calco Software

LAKESIDE HOUSE, KINGSTON HILL, SURREY, KT2 7QT. TEL 01-546-7256

Structured commands have been included to try and help teach better programming methods. The structured commands fall into two categories, looping and error trapping. To help with loops and 'if-thens' Commodore has added **ELSE, DO, LOOP, WHILE, UNTIL** and **EXIT**. The advantage of the loops is that by using the while and exit commands you can jump out of a loop without causing problems with stack addresses. The 'if-then' statement has been improved bym the addition of the commands **BEGIN** and **BEND** as well as **ELSE**. Now an 'if-then' routine can cover several lines of program.

The second area of structured commands is the error trapping commands. By using the commands TRAP and RESUME and error condition need not crash a program. The programmer has to plan ahead to find what correcting action is required on finding an error but this is just good programming practice anyway.

Control

Programmer Friendly commands are commands that have been included to give greater control over the computer. On the Commodore 64 nearly all the following commands could be achieved, but only through extensive uses of peeks and pokes.

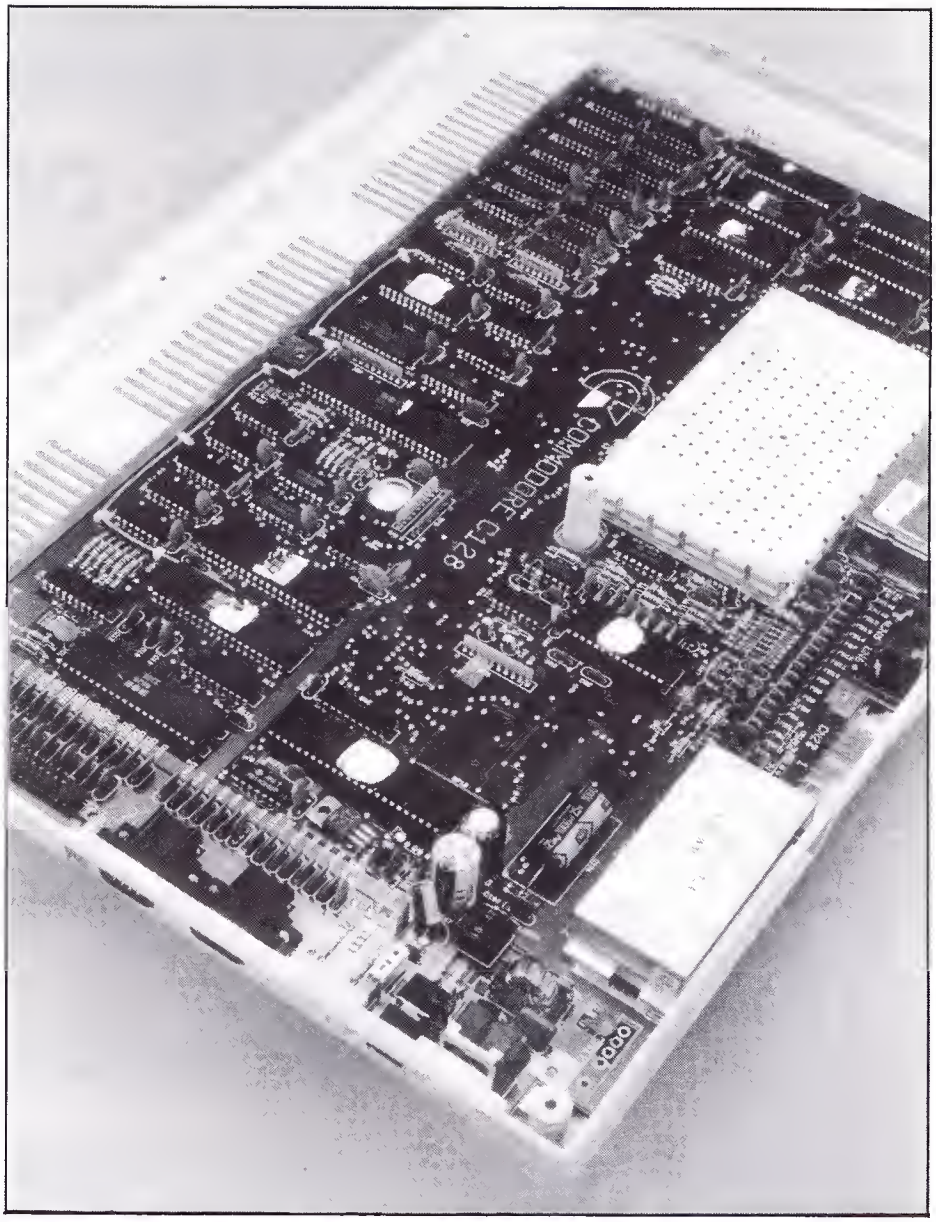
For easier pausing of the programme during running the C128 has two new commands. **SLEEP** and **GETKEY**. Sleep will pause the program by the number of seconds specified after the command. Getkey works like the usual get command but it waits for a key press before continuing. Another command that has changed slightly is **RESTORE**. This now can be restored to a given line number. For the machine coder's two new functions have been added DEC() and HEX$(). these are used to convert between hexadecimal and integer and back again.

The major addition to my mind is the introduction of the **INSTR()** function. This allows one string to be compared with another and the starting position of the first string is reported. This is great for menu commands where the first string is the selection and the second string is the master options. By knowing the position of the selection the correct subroutine can be called. Other additions to the BASIC are windows and the reading of joysticks, paddles and light pens.

In this first article I have looked at the improved commands which aid the art of actuallay entering the program and debugging it. All told there are 56 new commands or functions for aiding programming. This does not count the new commands for graphics and sound. Of the 56 commands, 24 commands are additional even to the C16 and Plus/4 Basic.

My overall impression of the Basic V70 commands reviewed above are that the C128 machine is very much easier to program and use than the C64. It is a pity that procedures and a merge command were not included in the basic, but you cannot have everything, I suppose.

Next issue we'll look at the new graphics and sound commands which make it easier to control the SID chip and hi-res Graphics of the C128.■



Space Snakes on the 64

The first part of a high-speed machine-code arcade game by ***Chris Woods***

THIS IS the first part of a high-speed machine code arcade game for the 64 by Chris Woods. Since the listing is quite long, we are publishing it in two parts, so make sure you get next month's issue for the final section.

In Space Snakes, you control the grey spaceship using the joystick in port two. To fire your lasers, press the fire button and move the joystick in the direction you wish to fire.

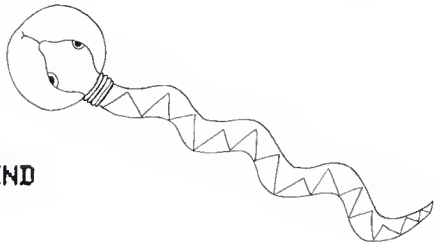
If you hit a Space Snake, you will gain points, but to get into the next screen you must obliterate the green bacteria asteroids. As you progress the number of asteroids will increase, and after the first screen deadly fireballs will appear. When you pass over snakes or asteroids your energy level will decrease, and when it reaches zero you will die.

You can speed up the game by pressing F3, or slow it down by pressing F5. To return to Basic, press F1.

To run the listing, first type in this month's instalment and save it. Next month, load up the first part and carry on typing the second part. When you have done so, save the entire listing, then run it. The program will read in each line, check it, and put it into memory. If there is a mistake in the checksum, the program will tell you which line it is in and stop. When you have corrected all your mistakes and the whole program checks through without any errors (this takes around five minutes), you should save the program again.

To play, load the program and type SYS 16384.

You are the last defender of your home planet against the Space Snakes, Bacteria Asteroids and Meteors. Watch out too for the gunsight which will destroy you if you hesitate too long. Good luck!■



```
10 FOR Y=0 TO 166
20 LN=160+10*Y
30 CS=0
40 FOR X=0 TO 19
50 READ Z$:GOSUB 100:CS=CS+Z:POKE 16384+Y*20+X,Z
60 NEXT X
70 READ CH:IF CH<>CS THEN PRINT"ERROR IN LINE ";LN:END
80 PRINT LN:NEXT Y
90 END
100 IF LEN(Z$)<>2 THEN Z=-999:RETURN
110 ZH$=LEFT$(Z$,1):ZL$=RIGHT$(Z$,1)
120 ZH=-VAL(ZH$)*(ZH$>="0" AND ZH$<="9")-(ASC(ZH$)-55)*(ZH$>="A" AND ZH$<="F")
130 ZL=-VAL(ZL$)*(ZL$>="0" AND ZL$<="9")-(ASC(ZL$)-55)*(ZL$>="A" AND ZL$<="F")
140 Z=ZH*16+ZL
150 RETURN
160 DATA 20,86,42,20,62,48,A9,01,A2,00,A0,00,20,B6,40,20,19,43,20,36, 1414
170 DATA 41,20,11,42,20,C0,44,20,C0,44,20,C0,44,20,CF,4B,20,D2,49,20, 1717
180 DATA 47,4A,20,FF,48,20,AC,49,20,D4,43,20,C9,43,20,54,46,A5,CB,C9, 2147
190 DATA 04,F0,1B,AD,99,40,F0,19,AD,F7,43,F0,03,4C,12,40,20,31,4B,AD, 2143
200 DATA A6,4B,10,BE,20,8D,4C,4C,00,40,4C,7B,43,A9,0E,85,AA,A0,0C,A2, 1922
210 DATA 1A,BD,8B,40,20,E5,40,CA,E0,0E,D0,F5,EE,06,4D,EE,0B,49,EE,2C, 2561
220 DATA 4A,EE,2A,4C,A9,00,8D,07,4D,A2,0A,A0,FF,20,46,42,CA,D0,F8,20, 2269
230 DATA 6D,4C,20,29,4C,A9,FF,8D,99,40,4C,12,40,00,4E,45,58,54,20,20, 1657
240 DATA 44,53,85,FB,8E,21,D0,8C,20,D0,A2,FA,A5,FB,9D,FF,D7,9D,F9,D8, 3375
250 DATA 9D,F3,D9,9D,ED,DA,A9,20,9D,FF,03,9D,F9,04,9D,F3,05,9D,ED,06, 3060
260 DATA CA,D0,E1,60,A9,FF,85,AB,60,E0,28,B0,F7,C0,19,B0,F3,C0,00,F0, 3310
270 DATA EF,48,A9,00,85,A8,98,0A,0A,0A,85,A7,0A,26,A8,0A,26,A8,18,65, 1820
280 DATA A7,85,A7,A5,A8,69,00,85,A8,8A,18,65,A7,85,A7,A5,A8,69,04,85, 2511
290 DATA A8,68,48,86,A9,A2,00,48,A1,A7,85,AB,68,81,A7,A5,A8,18,69,D4, 2587
300 DATA 85,A8,A5,AA,81,A7,68,A6,A9,60,AE,35,42,AC,3D,42,A9,00,85,AA, 2531
310 DATA A9,20,20,F1,40,A2,00,BD,36,42,A0,0A,9D,35,42,BD,3E,42,9D,3D, 1990
320 DATA 42,E8,E0,07,D0,ED,AE,3C,42,AC,44,42,20,55,42,29,0C,C9,0C,D0, 2237
330 DATA 08,20,55,42,29,03,8D,45,42,AD,45,42,C9,03,F0,16,C9,02,F0,18, 1752
340 DATA C9,01,F0,08,C8,C0,19,F0,43,4C,99,41,88,F0,3D,4C,99,41,CA,30, 2449
350 DATA 37,4C,99,41,E8,E0,28,F0,2F,8E,3C,42,8C,44,42,A2,06,BC,3D,42, 2157
360 DATA 86,B6,BD,35,42,AA,A9,0A,85,AA,A9,25,20,F1,40,A6,B6,CA,10,E9, 2618
370 DATA AE,3C,42,AC,44,42,A9,01,85,AA,A9,26,20,F1,40,60,49,01,AE,3C, 2027
380 DATA 42,AC,44,42,4C,6E,41,A2,08,AD,50,47,DD,34,42,D0,08,AD,51,47, 1997
390 DATA DD,3C,42,F0,06,CA,D0,ED,20,11,42,A2,08,86,FB,BD,34,42,BC,3C, 2465
400 DATA 42,48,A9,00,9D,34,42,A9,01,9D,3C,42,68,AA,A9,00,85,AA,A9,20, 1982
410 DATA 20,E5,40,A6,FB,CA,D0,DD,60,A2,11,BD,34,42,BC,23,42,9D,23,42, 2502
420 DATA 98,9D,34,42,CA,D0,F0,60,0A,0A,0A,0A,0A,0A,0A,0A,06,06,06,06, 1277
430 DATA 06,06,06,06,02,14,14,14,14,14,14,14,14,0C,0C,0C,0C,0C,0C,0C, 270
440 DATA 0C,03,48,8A,48,A2,FF,CA,D0,FD,88,D0,F8,68,AA,68,60,8A,48,98, 2805
450 DATA 48,A0,08,18,AD,BF,44,10,0E,A2,02,BD,BC,44,55,F7,9D,BC,44,CA, 2282
```

```
470 DATA 10,F5,38,2E,BC,44,2E,BD,44,2E,BE,44,2E,BF,44,88,D0,DD,68,A8, 2368
480 DATA 68,AA,AD,BF,44,60,A9,53,85,F7,A9,B5,85,F8,A9,76,85,F9,A9,00, 3003
490 DATA A6,19,9D,FF,D3,CA,D0,FA,A2,BF,BD,FC,43,9D,3F,03,CA,D0,F7,A9, 3384
500 DATA 07,8D,15,D0,A9,0D,8D,F8,07,A9,0E,8D,F9,07,A9,0F,8D,FA,07,A9, 2286
510 DATA 80,8D,01,D0,8D,03,D0,A9,32,8D,00,D0,A9,14,8D,02,D0,A9,02,8D, 2250
520 DATA 10,D0,A9,00,8D,05,D0,A9,04,8D,1C,D0,A9,02,8D,25,D0,A9,09,8D, 2173
530 DATA 26,D0,A9,07,8D,29,D0,A9,06,8D,28,D0,A9,0F,8D,27,D0,20,D2,47, 2261
540 DATA A9,FF,8D,F7,43,8D,99,40,A9,04,8D,A6,4B,A9,01,8D,06,4D,8D,0B, 2338
550 DATA 49,8D,2C,4A,8D,2A,4C,A9,00,8D,07,4D,60,20,29,4C,A2,28,BD,52, 1703
560 DATA 43,9D,FF,03,CA,D0,F7,AD,14,03,8D,F8,43,AD,15,03,8D,F9,43,78, 2565
570 DATA A9,8F,8D,14,03,A9,43,8D,15,03,58,20,D2,47,AD,1E,D0,AD,1F,D0, 2101
580 DATA A9,0E,8D,D1,49,A9,02,8D,9F,4A,60,2C,2C,2C,2C,20,20,20,20,20, 1583
590 DATA 20,20,45,4E,45,52,47,59,3A,31,30,30,30,20,20,20,20,20,20,20, 997
600 DATA 53,43,4F,52,45,3A,30,30,30,30,30,78,AD,F8,43,8D,14,03,AD,F9, 1872
610 DATA 43,8D,15,03,58,A9,00,8D,18,D4,60,78,AD,FA,43,F0,0D,CE,FA,43, 2348
620 DATA D0,08,AD,51,46,29,FE,8D,04,D4,AD,FB,43,F0,0D,CE,FB,43,D0,08, 2676
630 DATA AD,52,46,29,FE,8D,0B,D4,AD,FC,43,F0,0D,CE,FC,43,D0,08,AD,53, 2726
640 DATA 46,29,FE,8D,12,D4,4C,31,EA,AD,4F,47,C9,FF,D0,03,20,52,47,60, 2366
650 DATA AD,C6,45,F0,0A,CE,C6,45,F0,06,A9,26,20,7D,45,60,A9,20,20,7D, 2296
660 DATA 45,AD,06,4D,CD,07,4D,D0,F2,A9,00,8D,99,40,60,FF,00,00,00,00, 1942
670 DATA 00,03,81,C0,03,81,C0,03,81,C0,03,00,C0,03,00,C0,03,00,C0,03, 1560
680 DATA 00,C0,03,FF,C0,03,FF,C0,01,81,80,01,99,80,01,81,80,03,FF,C0, 2340
690 DATA 03,FF,C0,03,00,C0,03,00,C0,03,00,C0,03,00,C0,03,81,C0,03,81, 1686
700 DATA C0,03,81,C0,00,00,FF,00,03,18,C0,04,18,20,08,18,10,10,18,08, 1146
710 DATA 20,18,04,40,18,02,40,18,02,80,18,01,80,18,01,FF,FF,FF,80,18, 1463
720 DATA 01,80,18,01,40,18,02,40,18,02,20,18,04,10,18,08,08,18,10,04, 494
730 DATA 18,20,03,18,C0,00,FF,00,00,01,F4,00,02,96,00,05,AD,00,0A,D6, 1329
740 DATA 00,0D,65,80,16,9A,E0,19,AE,68,15,A5,94,36,CA,B6,5B,5B,5A,66, 2091
750 DATA EB,B5,9D,67,99,B6,AA,76,94,95,9E,A7,6B,64,59,5B,68,66,A5,90, 2823
760 DATA 2D,5B,E0,16,EE,C0,1D,96,00,07,EA,00,41,B5,17,C8,AD,00,DC,29, 2135
770 DATA 10,F0,1B,AD,00,DC,4A,B0,03,20,E3,44,4A,B0,03,20,EF,44,4A,B0, 2098
780 DATA 03,20,23,45,4A,B0,03,20,FB,44,60,AE,01,D0,E0,39,F0,04,CA,8E, 2091
790 DATA 01,D0,60,AE,01,D0,E0,E5,F0,04,E8,8E,01,D0,60,48,AD,10,D0,AE, 2707
800 DATA 00,D0,E8,8E,00,D0,D0,07,09,01,8D,10,D0,68,60,29,01,D0,02,68, 1936
810 DATA 60,AD,00,D0,C9,47,90,05,A9,46,8D,00,D0,68,60,48,AE,00,D0,CA, 2342
820 DATA 8E,00,D0,E0,FF,D0,14,AD,10,D0,29,01,D0,05,A9,00,8D,00,D0,AD, 2400
830 DATA 10,D0,29,FE,8D,10,D0,AD,10,D0,29,01,D0,09,E0,11,D0,05,A2,12, 2174
840 DATA 8E,00,D0,68,60,48,AD,C6,45,D0,20,8E,EA,45,8C,EB,45,A2,08,AD, 2534
850 DATA EA,45,9D,C9,45,98,9D,D1,45,CA,D0,F3,A9,1E,8D,C6,45,AE,EA,45, 3054
860 DATA AC,EB,45,68,60,8D,EC,45,AD,C6,45,29,07,85,AA,A2,08,BD,D1,45, 2550
870 DATA 48,18,7D,E1,45,9D,D1,45,A8,BD,C9,45,48,18,7D,D9,45,9D,C9,45, 2511
880 DATA 8E,C7,45,AA,8E,C8,45,8C,C9,45,68,AA,68,A8,A9,20,20,E5,40,AE, 2647
890 DATA C8,45,AC,C9,45,AD,EC,45,20,E5,40,AE,C7,45,CA,D0,C4,60,00,00, 2658
900 DATA 00,00,08,08,08,08,08,08,08,08,08,08,08,08,08,08,08,08,00,01, 129
910 DATA 01,01,00,FF,FF,FF,FF,FF,00,01,01,01,00,FF,00,00,00,48,8A,48, 1817
920 DATA A2,30,A9,3A,EE,27,04,CD,27,04,D0,2F,8E,27,04,EE,26,04,CD,26, 1929
930 DATA 04,D0,24,8E,26,04,EE,25,04,CD,25,04,D0,19,8E,25,04,EE,24,04, 1651
940 DATA CD,24,04,D0,0E,8E,24,04,EE,23,04,CD,23,04,D0,03,8E,23,04,68, 1666
950 DATA AA,68,60,A9,81,8D,04,D4,8D,51,46,A9,0F,8D,05,D4,A9,DA,8D,06, 2393
960 DATA D4,A9,0F,8D,18,D4,A9,64,8D,01,D4,A9,0F,8D,FA,43,60,00,00,00, 2134
970 DATA AD,00,DC,29,1F,C9,0F,B0,10,AD,C6,45,D0,0B,A9,00,20,CD,46,AD, 2181
980 DATA 00,DC,20,0C,47,AD,4F,47,C9,80,D0,22,A9,00,8D,4F,47,20,2F,46, 1838
990 DATA AE,50,47,AC,51,47,20,55,45,20,D3,41,AE,06,4D,A0,0A,20,ED,45, 1908
1000 DATA 88,D0,FA,CA,D0,F5,AD,4F,47,C9,7F,D0,25,A9,00,8D,4F,47,20,2F, 2684
1010 DATA 46,AE,50,47,AC,51,47,20,55,45,20,2B,4A,EE,07,4D,AE,06,4D,A0, 1793
1020 DATA 14,20,ED,45,88,D0,FA,CA,D0,F5,AE,AB,49,CA,8E,AB,49,8E,08,D4, 2975
1030 DATA 60,A0,00,48,0A,AA,BD,01,D0,38,E9,27,90,04,4A,4A,4A,A8,68,0A, 1886
1040 DATA AA,BD,00,D0,48,AD,10,D0,E0,00,F0,05,4A,CA,CA,D0,FB,29,01,AA, 2654
1050 DATA 68,4A,E0,01,D0,02,09,80,4A,38,E9,03,C9,03,90,03,4A,AA,60,A2, 1969
1060 DATA 00,60,68,60,48,AD,4F,47,D0,2D,68,8E,50,47,8C,51,47,A2,00,4A, 1869
1070 DATA 90,06,E8,E8,E8,4C,1B,47,BD,41,47,8D,4D,47,BD,42,47,8D,4E,47, 2250
1080 DATA BD,43,47,8D,93,47,A9,FF,8D,4F,47,20,81,49,60,68,60,00,FF,27, 2225
1090 DATA 00,01,28,FF,00,29,01,00,2A,00,00,00,00,00,A5,A7,48,A5,A8,48, 1189
1100 DATA A5,A9,48,A5,AA,48,A5,AB,48,AE,50,47,AC,51,47,A9,00,85,AA,A9, 2511
1110 DATA 20,20,E5,40,C9,FF,D0,08,A9,00,8D,4F,47,4C,C2,47,8A,18,6D,4D, 2178
1120 DATA 47,8D,50,47,AA,98,18,6D,4E,47,8D,51,47,A8,A9,01,85,AA,A9,2A, 2112
1130 DATA 20,E5,40,A5,AB,C9,25,F0,0B,C9,26,F0,07,C9,2B,F0,10,4C,C2,47, 2477
1140 DATA A9,80,8D,4F,47,A9,26,8D,DF,43,4C,C2,47,A9,7F,8D,4F,47,A9,2E, 2369
1150 DATA 8D,DF,43,4C,C2,47,68,85,AB,68,85,AA,68,85,A9,68,85,A8,68,85, 2635
```

● COMMODORE 64 ● TRANSFER ALL MAJOR TURBOS ● AUTOMATIC ● NO USER KNOWLEDGE ●

DISK TO DISK ● DISK TO TAPE ● TAPE TO TAPE ● TAPE TO DISK

● NO HARDWARE ● TURBO IDENTIFIER ● AUTO LOAD OPTIONS

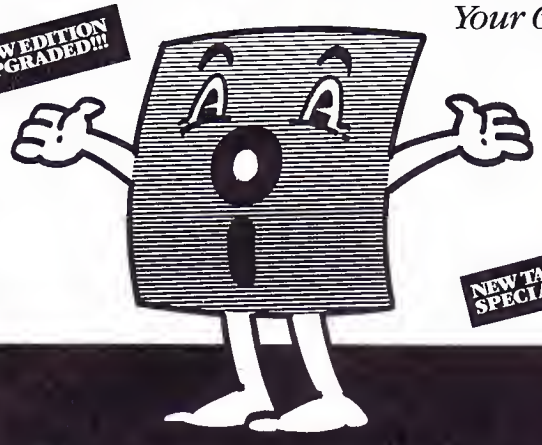
LOOK AT DOSOFT'S NEW OFFERINGS AND SEE WHAT'S IN THEM FOR YOU

'The best transfer utility of the lot' *Your 64*

MegaTransfer Disk

Our complete collection of tape to disk transfer utilities covers *all* the major turbo loading systems, including the latest combination picture/stripe loaders, and individual routines for unusual loaders. ● Now incorporates DISKUS 1 (previous price £11) for your standard load tape collection ● All transfer is automatic ● No special hardware or user knowledge required ● Efficient use of disk space ● Transferred programs reload independently ● MegaTransfer Disk will transfer programs which NO other utility will handle ● An essential purchase. Don't confuse MegaTransfer with similar utilities which have severely limited capabilities. **£17**

NEW EDITION UPGRADED!!!



NEW TAPE SPECIAL!!

MegaUtility Disk

A handy collection of utilities to make the best of your 1541 and 64. Very fast. Very convenient. ● **AlphaLoad** Disk Turbo Loader. Load your programmes at over FOUR times the normal rate. Example: 200 blocks. Normal speed 130 seconds. With Alphaload just 30 seconds. ● **Fast Copy** Backup a whole disk in just 3 minutes. Not for heavily protected commercial disks. ● **Turbo File Copy** copy selected programs from your disks at TURBO speed. ● **Fast Format** Format your new disks at TURBO speed. ● **Pro Sprite** A high class sprite library/editor. 100% machine code. Joystick control. **£12.50**

Disk to Tape *Plus*

A versatile collection of Disk-to-Tape routines for single and multipart programs. Featuring our new tape turbo loader with **Visible Screen** and stripey border ● **Automatic** disk to tape ● Outputs program sections to tape as they load from disk ● Selective disk to tape transfer with or without bootloader ● Maximum file length 207 blocks ● Not for protected commercial disks. ● **Professional** version available—includes mastering scheduler and duplication rights—£25.00 **£12.50**

MegaTape

An outstanding new Tape-to-Tape utility for fast loading programs. ● Covers *all* the major loading systems ● No extra hardware required ● All you need is a Commodore 64 and one tape deck ● No user knowledge required ● Transferred programs load independently at *Turbo* speed with **Visible Screen** and stripey border ● **Double Value**—incorporates RBS Plus to convert your slow load programs to turbo load ● Also handles RBS and Fastback programs. **£9.50**

AND SAVE MONEY TOO!

SAVE! SAVE! SAVE! When you buy any two of **MegaTransfer Disk**, **MegaUtility Disk**, or **Disk-to-Tape *Plus*** just £24.00 (single disk), or **All Three** at **£29.99** save **£12**

Or save **£33** on our **Complete Collection** (every program in this Ad, including **Professional Disk-to-Tape** and **MegaTape** at only **£39.99** (single disk).

How to get your DoSoftware

All programs for Commodore 64. Send SAE for full details or cash/cheque/PO for fast despatch to:

DoSoft (Dept CH), 2 Oakmoor Ave, Blackpool FY2 0EE

UK postage included. Europe add 75p. Overseas add £1.50 for airmail.

DoSoft

You'll Do it Better with DoSoft

● FAST DISK UTILITIES ● LOADERS ● 3-MIN DISK COPY ● FAST DISK FILE COPY ● FAST FORMAT ●

+ SUPER BREAKER +
+ + + EXTRA + + +

CONTAINS TWO GREAT UTILITY DISKS. SUPER BREAKER AND SUPER BREAKER-PLUS (TOTAL OF 7 UTILITIES)

This great offer includes a multitude of useful utilities: Turbo Breaker-II, Turbo Breaker Plus, Arrowfile-II, Super Diskopy, Transfer-II, Disk Doctor and Turbo Menu Maker in one package representing unbeatable value.

TURBO BREAKER PLUS: This all new package transfers many of the games not covered in Turbo Breaker-II. Transfers: Nearly all Novaloads, Firebird, new Mastertronic, Beyond, Leisure genius and many more individual files.

TURBO BREAKER-II: This package will transfer: Pavloader, Burner, Activision, Ariola and many more.

MENU MAKER: Will make menu on your disk with an option to turbo-load from disk.

TRANSFER-II: Transfers nearly all slow load programmes.

SUPER DISKOPY: Copies unprotected disks in 3 minutes and also copies many protected disks in 6 minutes.

ARROW FILE-II: A filing program that allows you to read disk directories straight into the file so that you can keep a record of all your disk software.

DISK DOCTOR: Disk editing utility that allows you to edit any block on the disk. Also include scratched file recovery and directory editing facilities.

ALL THESE GREAT UTILITIES ON TWO DISKS FOR A MERE £27.00.

Separate: Super Breaker — Menu Maker, Turbo Breaker-II, Super Diskopy, Transfer-II.....£22.00
Super Breaker — Turbo Breaker+, Disk Doctor, Arrowfile-II.....£15.00

ARROW MICRO SERVICES

CBM 64 **CBM 64**

21 Garden Avenue, Bexley Heath, kent DA7 4LH

Easymusic

EASYMUSIC removes the tedious business of POKEing values into the registers of the SID chip in order to produce sounds. The command format is as follows; SYS(828), V,AD,HF,LF,SR,W,D. V = volume, AD = attack/decay, hf = high frequency of note, LF = low frequency, SR = sustain/release, W = waveform, D = duration (1-255). For details of the limitations of the parameters, consult the Programmers' Reference Guide, or just experiment!

For an example sound, try SYS (828), 15,190,17,37,248,17,1. At present, the program loads in the cassette buffer, but this can be changed by altering line 10.

```
10 FOR T=828 TO 943
20 READ A
30 POKE T,A
40 NEXT
9000 DATA 32,241,183,142,232,3,32,241,183,142,233,3,32,241,183,142
9010 DATA 234,3,32,241,183,142,235,3,32,241,183,142,236,3,32,241
9020 DATA 183,142,237,3,32,241,183,142,238,3,173,232,3,141,24,212
9030 DATA 173,233,3,141,5,212,173,234,3,141,1,212,173,235,3,141
9040 DATA 0,212,173,236,3,141,6,212,173,237,3,141,4,212,173,238
9050 DATA 3,141,239,3,160,255,162,255,202,208,253,136,208,248,206,239
9060 DATA 3,169,0,205,239,3,208,236,169,0,141,4,212,141,5,212
9070 DATA 141,6,212,96
```

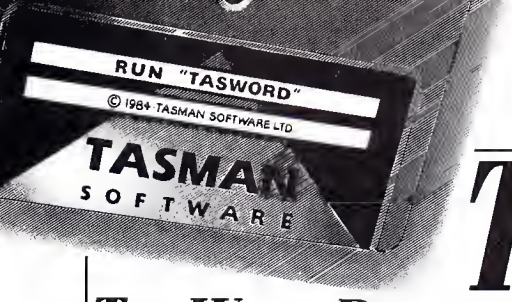
Butterfly

This game for the 64 comes from Joseph Gatt of Zebbug, Malta

THE OBJECT of this game is to catch the yellow butterfly while avoiding the playful cat. You have three chances to do this, each with a time limit of thirty seconds. Each time you succeed you will be rewarded with a bonus life. You are the white butterfly, which is controlled with a joystick in port two.

Program Notes; 10-100, introduction and variables; 300-493, initialise and read sprites; 500-530, print timer; 570-68j0, set new sprite positions; 690, flap wings; 700-810, check for sprites leaving screen; 820, poke new sprite positions; 850-860, check for collisions; 980, flap wings; 100-1440, sprite data; 2000-2200, end of lives; 3000-3040, sound effects; 4000-4040, end of game.

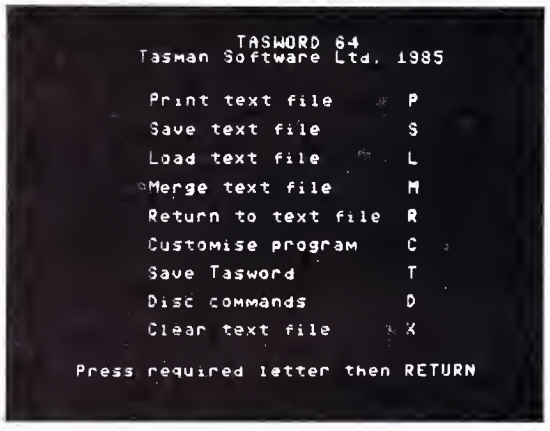
```
10 REM BUTTERFLY BY JOSEPH GATT
20 POKE53280,0:POKE53281,0:POKE646,1:PRINT"■"
40 V=53248:S=54272
50 FL$="●●●
```

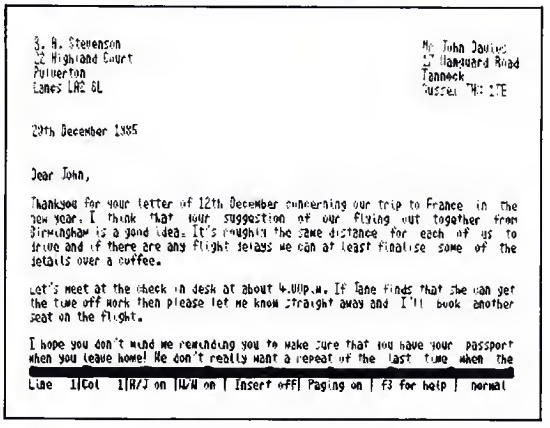


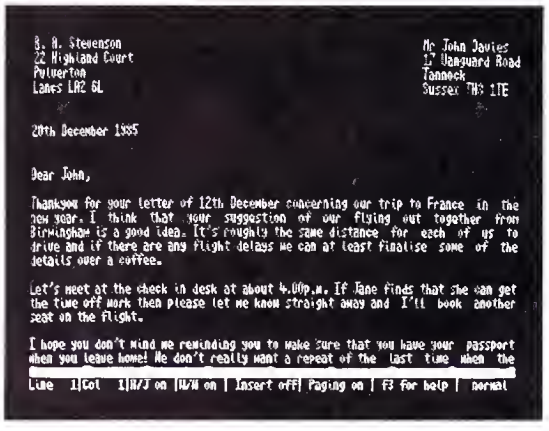
TASWORD 64

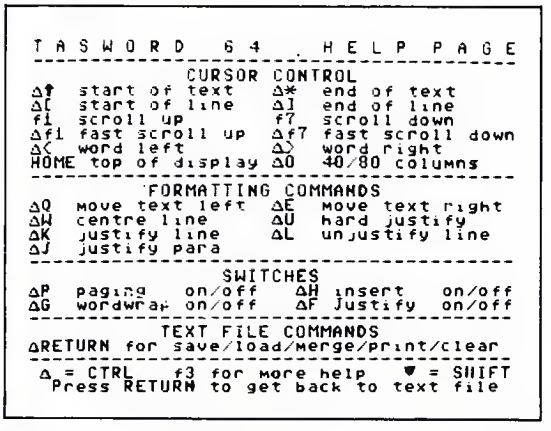
THE WORD PROCESSOR. 80 CHARACTERS PER LINE ON THE SCREEN!

A WORDPROCESSOR PROGRAM THAT'S AS GOOD AS YOUR 64.









"Tasword is pretty unique product. It's 80-column display is well readable and backed up by a well thought out program that really can hold its own in professional use." **Commodore User November 1985**

TASWORD 64 is a new member of the highly acclaimed TASWORD family of word processing programs. Eighty characters per line on the screen is just one of the features of this versatile program. With the eighty character display you know that WHAT YOU SEE IS WHAT YOU WILL GET when you print your text. No need for text reformatting before printing and no need for horizontal scrolling.

Your text is printed just as you set it out on the screen. TASWORD 64 comes complete with a quality manual and TASWORD 64 TUTOR. This teaches you word processing using TASWORD 64. Whether you have serious applications or simply want to learn about word processing TASWORD 64 and TASWORD 64 TUTOR make it easy and enjoyable.

Available from good software stockists and direct from:

Another remarkable feature of TASWORD 64 is the price!

CASSETTE	**£17.95**
DISC	**£19.95**

Tasman SOFTWARE

Springfield House, Hyde Terrace, Leeds LS2 9LN. Tel: (0532) 438301

One of a famous family:

- *TASWORD TWO (ZX Spectrum)*
- *TASWORD MSX (MSX Computers)*
- *TASWORD 464 (Amstrad)*
- *TASWORD 464-D (Amstrad)*
- *TASWORD 6128 (Amstrad)*
- *TASWORD EINSTEIN (Tatung Einstein)*

If you do not want to cut this magazine simply write out your order and post to: TASMAN SOFTWARE, DEPT CH, SPRINGFIELD HOUSE, HYDE TERRACE, LEEDS LS2 9LN

I enclose a cheque/PO made payable to TASMAN SOFTWARE Ltd OR charge my ACCESS/VISA number .....

NAME _____

ADDRESS _____

_____

_____

ITEM _____ ***PRICE*** £ _____

_____ £ _____

_____ £ _____

Outside Europe add £1.50 airmail per item: £ _____

TOTAL £ _____

Telephone ACCESS/VISA orders: Leeds (0532) 438301

Please send me your FREE brochure describing TASWORD 64 ☐ *Tick here*

All prices include VAT, postage and packaging

CH

```
660 XC=XC+LV+1:IFXA<XCTHENXC=XC-(LV*2)-2
680 YC=YC+LV+1:IFYA<YCTHENYC=YC-(LV*2)-2
690 POKE2040,193:POKE2041,193
700 IFXA<30THENXA=30
710 IFXA>255THENXA=255
720 IFYA<50THENYA=50
730 IFYA>183THENYA=183
740 IFXB<30THENXB=30
750 IFXB>255THENXB=255
760 IFYB<30THENYB=30
770 IFYB>183THENYB=183
780 IFXC<50THENXC=50
790 IFXC>255THENXC=255
800 IFYC<30THENYC=30
810 IFYC>165THENYC=165
820 POKEV,XA:POKEV+1,YA:POKEV+2,XB:POKEV+3,YB:POKEV+8,XC:POKEV+9,YC
850 IF(PEEK(V+30)AND(3))=3THEN2100
860 IF(PEEK(V+30)AND17)=17THEN2200
980 POKEV+21,255:POKE2040,192:POKE2041,192
990 GOTO 500
1100 REM DATA BUTTERFLY - SPREAD WINGS
1110 DATA0,0,0,8,0,16,4,0,32,2,0,64,1,0,128,0,129,0,60,66,60,127,36,254
1120 DATA255,153,255,255,255,255,127,126,254,63,126,252,95,126,250,239,90,247
1130 DATA255,126,255,127,255,254,125,255,190,59,153,220,55,60,236,28,60,56,8
1140 DATA 8,24,16
1200 REM DATA - BUTTERFLY
1210 DATA129,0,0,129,0,0,66,0,0,66,0,0,66,0,0,36,0,1,165,128,1,165,128,1,53
1220 DATA128,1,255,128,3,255,192,3,255,192,3,91,64,3,127,64,3,127,64,3,127,64
1230 DATA 3,219,192,3,255,192,3,255,192,3,255,192,1,153,128
1300 REM DATA 'KIM'
1310 DATA2,0,176,1,125,48,24,254,48,24,254,112,24,254,96,28,124,96,28,56,224
1320 DATA12,124,192,14,254,192,15,255,0,7,255,0,1,255,96,1,255,96,1,255,96
1330 DATA13,255,96,13,255,96,12,254,208,13,125,144,15,16,32,14,12,192,0,3,0
1400 REM DATA HEART
1410 DATA3,0,96,7,129,246,31,195,246,127,231,252,127,231,252,127,239,254
1420 DATA 255,191,254,255,191,255,255,191,255,255,223,255,255,255,254
1425 DATA127,247,254,127,251,252
1430 DATA63,253,248,31,254,240,15,255,224,7,255,192,3,255,128,1,255,0,0,254,0
1440 DATA0,124,0,0,56,0
2000 REM RUN OUT OF TIME
2005 PRINT"■■■■■■■■■■■■■>> YOU RAN OUT OF TIME <<"
2010 FORG=1TO10:GOSUB3000:POKEV+21,0:FORD=1TO200:NEXTD:POKEV+21,255:NEXTG
2080 SC=SC+(60-VAL(CL$))+(LV*10):NEXTLV:GOTO4000
2100 REM SUCCESFUL LIVE
2110 SC=SC+(60-VAL(CL$))+(LV*10)+200
2115 FORG=1TO10:POKE2040,195:POKEV+21,1:GOSUB3000:FORD=1TO60:NEXTD
2150 POKEV+21,0:FORD=1TO60:NEXTD:NEXTG:POKE2040,192:LV=LV-1:TV=TV+1:NEXTLV
2190 POKEV+30,0:GOTO4000
2200 REM FAILED LIVE
2210 SC=SC+(60-VAL(CL$))-50
2212 PRINT"■■■■■■■■■■■■■>> KIM GOT YOU!!! <<<"
2220 FORG=1TO10:POKEV+21,0:GOSUB3000:FORD=1TO200:NEXTD:NEXTG:NEXTLV:GOTO4000
3000 REM 'PIP'
3005 POKES+5,9:POKES+6,0:POKES+24,15:POKES+24,15:POKES+1,129:POKES,135
3020 POKES+24,15:POKES+1,129:POKES,135
3040 POKES+4,17:FORD=1TO30:NEXTD:POKES+4,16:RETURN
4000 REM END
4010 POKEV+21,0:IFSC>HSTHENHS=SC
4020 PRINT"■■■■■■■■   SCORE■",,SC:PRINT"■■■■   HIGH-SCORE■",HS
4032 PRINT"■■■■   NO. OF LIVES■",TV+3
4040 FORD=1TO5000:NEXTD:GOTO300
```

Send us your Commodore programs, enclosing a cassette — and a printout on plain white paper if possible. Each listing must be accompanied by a typewritten introduction describing the program and explaining how it is constructed. We pay £6.00 for each bug-free listing published. We cannot guarantee to return every program submitted, so please keep a copy. If you want us to return your listing you must include a stamped, addressed envelope. If you have any problems with the programs, please write to the appropriate author, Software File, Commodore Horizons, 12-13 Little Newport Street, London WC2H 7PP

FAST COMPUTER REPAIRS

VIDEO VAULT INTERNATIONAL
10★ REPAIR SERVICE

ACCESS WELCOME

THE NO. 1 REPAIR CENTRE IN THE U.K. OTHERS FOLLOW

24 HOUR TURNAROUND

WHILE YOU WAIT SERVICE CALL FOR APPOINTMENT

COMMODORE 64 REPAIRED FOR ONLY £35.00 including POST & PACKING · PARTS · INSURANCE – NO HIDDEN EXTRAS!

Are you fed up waiting weeks for your computer to be repaired well wait no longer. We repair all Commodores same day. We also do Com 16, Vic 20, 1541 Disk Drives, plus 4, or you can order the Replacement Chips from our D.I.Y. section.

- ★ While you wait repair service.
- ★ 3 month written guarantee on all repairs.
- ★ International Repair Company. We repair computers from all over the world.
- ★ All Computers sent Mail Order turned around in 24 hrs.
- ★ Most Commodores repaired within 1 hr.
- ★ All Micros insured for return journey.
- ★ Over 8 years experience working with computers.
- ★ All computers fully tested.
- ★ Power supplies fully tested.
- ★ RGB output fully tested.

N B WE DO NOT CHARGE AN AVERAGE PRICE

TRADE REPAIRS most welcome

BEST SERVICE – BEST PRICES!

TRADE SUPPLIED FROM STOCK!

ORDER NOW!

7 OPEN DAYS A WEEK

VideoVault Ltd

Telephone: Glossop (STD 04574) 66555/67761
140 High St. West, Glossop, Derbyshire, England

VideoVault D.I.Y. SECTION–

If you know what chip has gone in your computer you can order the replacement I.C. from our range.

6526	23.00	901225-01	23.00
6510	23.00	6569	23.00
6581	23.00	4164 RAMS	3.00
901227-03	23.00	Power Supply Units	29.00
901226-01	23.00		

All prices include V.A.T., please ADD £1.50 to cover P & P and handling costs, insurance.

© Copyright Videovault Ltd. No. 151085

cascade CASSETTE 50

50 COMPUTER GAMES ON ONE CASSETTE

YOURS FOR £9.95

including FREE Watch and Postage

PLUS SPECIAL FREE WATCH OFFER...

CASSETTE 50 IS AVAILABLE ON

BBC A/B ATARI DRAGON ELECTRON VIC 20 ORIC-1 ZX81 apple Atmos Spectrum commodore 64 AMSTRAD

FREE 20 KEY, MULTIFUNCTION CALCULATOR WATCH with every order for a Cassette 50

- Normal 12 and 24 hour time mode
- Calendar mode
- Alarm mode
- Calculator mode

WORTH OVER £10

Commodore 64

Only you can save Europe from destruction! It's ROCKET LAUNCH, the thrilling war game that reproduces a European map. More ambitious? Try rescuing your crew under an ultrafast GALACTIC ATTACK and escaping back to your spaceship! Just two of the great games on your Cassette-50, featuring high resolution and user-defined graphics, sprites, sound and music.

1. Maze Eatar
2. Galactic Attack
3. Space Mission
4. Lunar Landing
5. Plasma Bolt
6. Startrek
7. Radar Landing
8. Attackar
9. Galactic Dog Fight
10. Psion Attack
11. Ivasive Action
12. Noughts & Crossas
13. Boggles
14. Pontoon
15. Ski Jump
16. Hangman
17. Old Bones
18. Thin Ice
19. Orbitter
20. Motorway
21. Force Field
22. Nim
23. Tunnel Escape
24. Barral Jump
25. Cannonball Battle
26. Dvartake
27. Sitting Targat
28. Smash the Window
29. Space Ship
30. Jat Flight
31. Phaser
32. Intruder
33. Inferno
34. Ghosts
35. Submarines
36. Rocket Launch
37. Planats
38. Black Hole
39. Dynamite
40. Do Your Sums
41. Darby Dash
42. Space Search
43. Univarse
44. Rats
45. Tankar
46. Parachute
47. Jet Mobile
48. High Rise
49. The Force
50. Exchange

Names and games may vary for each type of computer.

FREE calculator watch with every Cassette 50

EXPRESS DELIVERY-ORDER NOW!

ONLY £9.95

Name _____

Address _____

_____ Post Code _____

Country _____ CH/2/86

Postage FREE in U.K. Add £1.00 for oversees orders. Free watch end tape will be despatched within 7 days.

I enclose a cheque/ postal order for £ _____ made peyable to Cascade Games Ltd.

or through any Post Office by TRANSCASH (Giro No. 655 6655) For even faster ordering when charging to Access, Barclaycard and Trustcard Visa use our 24 hour service. (0423) 504663.

ACCESS VISA No. _____

COMMODORE 64 ☐	ATARI ☐	ORIC 1 ☐	BBC A/B ☐
SPECTRUM ☐	VIC 20 ☐	ZX 81 ☐	APPLE ☐
AMSTRAD ☐	ATMOS ☐	DRAGON ☐	ELECTRON ☐

Cascade Games Ltd., 1-3 Haywra Crescent, Harrogate, North Yorkshire, HG1 5BG, England. ☑
Telephone: (0423) 504663. *Registered Number 1755554*

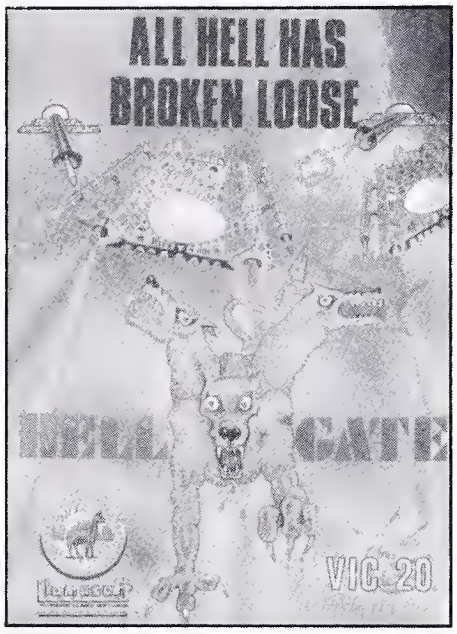
win ★ win ★ win

VIC 20 GAMES

from

VIC 20 FANS, rejoice! If your micro is feeling neglected, we have a great offer from Llamasoft which will make your Vic jump for joy. TWENTY lucky winners can get packs of THREE smash-hit Jeff Minter games, just by entering our simple competition.
All you have to do to win is to look at the picture of Jeff and one of his furry friends. We all know Jeff is known as The Hairy One — but can you think of an appropriate name for the shaggy toy?

When you've come up with a suggestion, put it on a POSTCARD or the back of a sealed envelope, together with your name and address, and send it to *Llamasoft Contest, Commodore Horizons, 12/13 Little Newport Street, London WC2H 7PP,* to arrive by the last day of February. The twenty best entries will win the games, and the winners' names will be published in the April issue. All normal competition rules apply.■

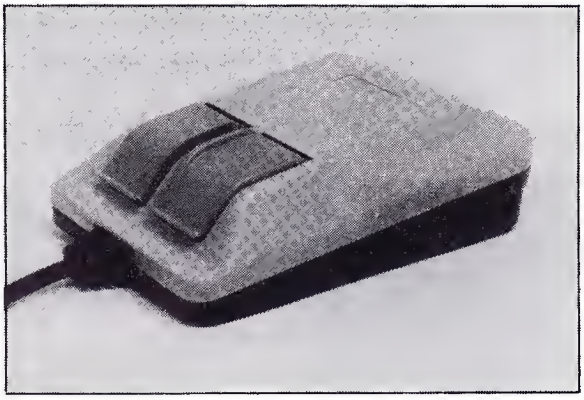


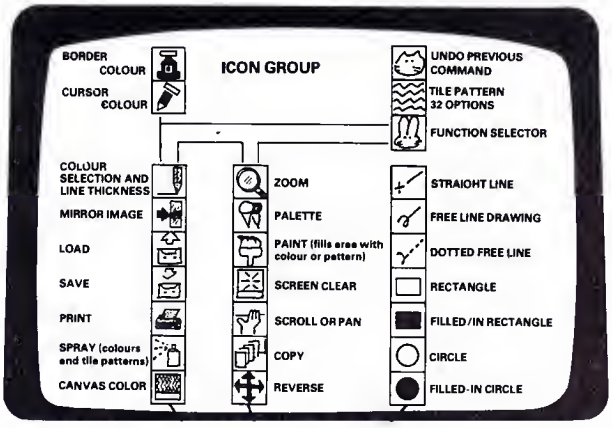
● **HELL GATE** is a super-fast blast for the 8K or 16K expanded Vic 20. You control two interactive space cannon, and your task is to annihilate every alien you see — but spare the goats!

● **METAGALACTIC LLAMAS BATTLE AT THE END OF TIME,** for the unexpanded Vic 20, features venomous space spiders trying to defeat your heroic llama.

● **LASER ZONE** is another all-action shoot-'em-up, as you master the control of vertical and horizontal guns, working together to wipe out sinister invaders. For the expanded Vic 20.

MS 2000 COMMODORE MOUSE





The MS 2000 is a beautifully designed peripheral used to move the cursor simply and quickly around the screen like a drawing pen, paint brush or air spray. This popular device is so natural and friendly to use that it will add an exhilerating new dimension to creative art, CAD, design and business drawings such as graphs, pi charts and plans.

The MS 2000 is a high quality mouse with a RUBBER COATED BALL which is quiet and will not lose accuracy through slippage. The hardware incorporates an OPTICAL ENCODING technique in the mouse which has a resolution of 100 points to the inch. It is accurate, reliable and repeatable.

ONLY £64.90 INCL. MS2000 + CASSETTE. DISC OPTION £3.50 P&P £1.50

'Commodore Horizons' **Certainly the best mouse for the 64** ***'PCW'*** **Hardware excellent, software technically stunning**

'Micronet' **has to be the best**

Also available: MSX MOUSE & THE FAMOUS BBC MEGA MOUSE

WIGMORE HOUSE LIMITED

32 Saville Row, London W1X 1AG. 01-734 0173 — 01-734 8826

Cheetah Marketing

are proud to announce the arrival of their 125 Joystick

Compatible with ZX Spectrum, Commodore 64, Vic 20, Amstrad, Atari, MSX, etc.

At only £8.95 the features on the 125 are second to none. Besides its unique internal structure, built to withstand immense punishment from even the most vigorous games player, the joystick contains no less than four extremely sensitive fire buttons. Two are housed in the handgrip which has been moulded for extra comfort and ease of operation. The trigger finger fire button provides ease and comfort for your finger and the top fire button is contoured to fit your thumb for sure fire shooting. The base fire buttons are positioned for extra control and two hand firing whether you are right or left handed.

A built in auto-fire switch provides continuous shooting at the touch of a fire button.

The 125 comes complete with a full 12 months warranty and is available from High Street stores and all good computer shops.

ONLY £8.95

with this **NEW JOYSTICK from**

Price include VAT, Postage and Packing. Delivery normally 14 days. Export orders at no extra cost. Dealer enquiries welcome.

Send cheque/PO now to:-

Cheetah Marketing Ltd.

1, Willowbrook Science Park, Crickhowell Road, St. Mellons, Cardiff
Telephone: (0222) 777337 Telex: 497455

THE FINAL CARTRIDGE®

THE FIRST OUTSIDE OPERATING SYSTEM FOR THE CBM 64 *

£45

This new operating system built in a cartridge does not use any memory and is always there. Compatible with 98% of all programs.

DISK TURBO - 6 times faster loading - 8 times faster saving.

TAPE TURBO - 10 times faster, even with files - normal Commodore commands - compatible with standard turbo's.

ADVANCED CENTRONICS INTERFACE - compatible with all the well-known centronics printers and Commodore printer programs. Prints all the Commodore graphics and control codes (important for listings).

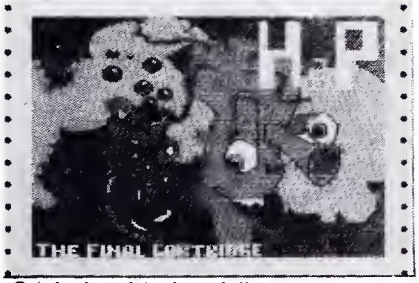
SCREEN DUMP FACILITIES - of low-res Hi-res and multicolour screens!! Prints full page with 12 shades of grey for multicolour pictures even from games and programs like Doodle, Koala pad, Printshop etc. Searches automaticly for the memory-address of the Picture. Special version available for the CBM 801 and 803 printers.

24K EXTRA RAM FOR BASIC-PROGRAMS AVAILABLE: Two new commands „Memory read", „Memory write". They move 192 bytes with machinelanguage-speed anywhere in the 64K Ram of the CBM 64. Can be used with strings and variables.

BASIC 4.0 COMMANDS - like Dload, Dsave, Dappend, Catalog, etc.

BASIC TOOLKIT - with Auto, Renum (incl. Goto and Gosub), Find, Help, Old, etc.

* works with C128 in the 64 mode.



Original multicolour full page screen dump print out.

PREPROGRAMMED FUNCTION KEYS: - Run, Load, Save, Catalog, Disk commands, List (removes all list-protections).

KEYBOARD EXTRA'S - Allows you to delete part of a line; stop and continues listings; move cursor to lower lefthand corner. Pokes and Syscalls in Hex. Typ-command operates your printer as a typewriter.

COMFORTABLE EXTENDED ML. MONITOR: - with relocated load scrolling up and down. Bankswitching, etc. - **does not reside in memory.**

RESET SWITCH: - resets to monitor; resets with old, resets to Hi-res printing; resets every protected program.

ON/OFF SWITCH - we hope you never need that one.

FREEZE FRAME
Stops and continues almost every program and allows you to make a **total back up** to disk or tape automatically.

14 Days money back guarantee if you are dissatisfied.

12 Months replacement guarantee.

H&P COMPUTERS (Home & Personal)

U.K. ORDERS Available by the wellknown Commodore Dealers or directly from

H & P Computers
9 Hornbeamwalk
Witham Essex CM8 2 SZ England d.
Telephone: 0376 - 51 14 71.

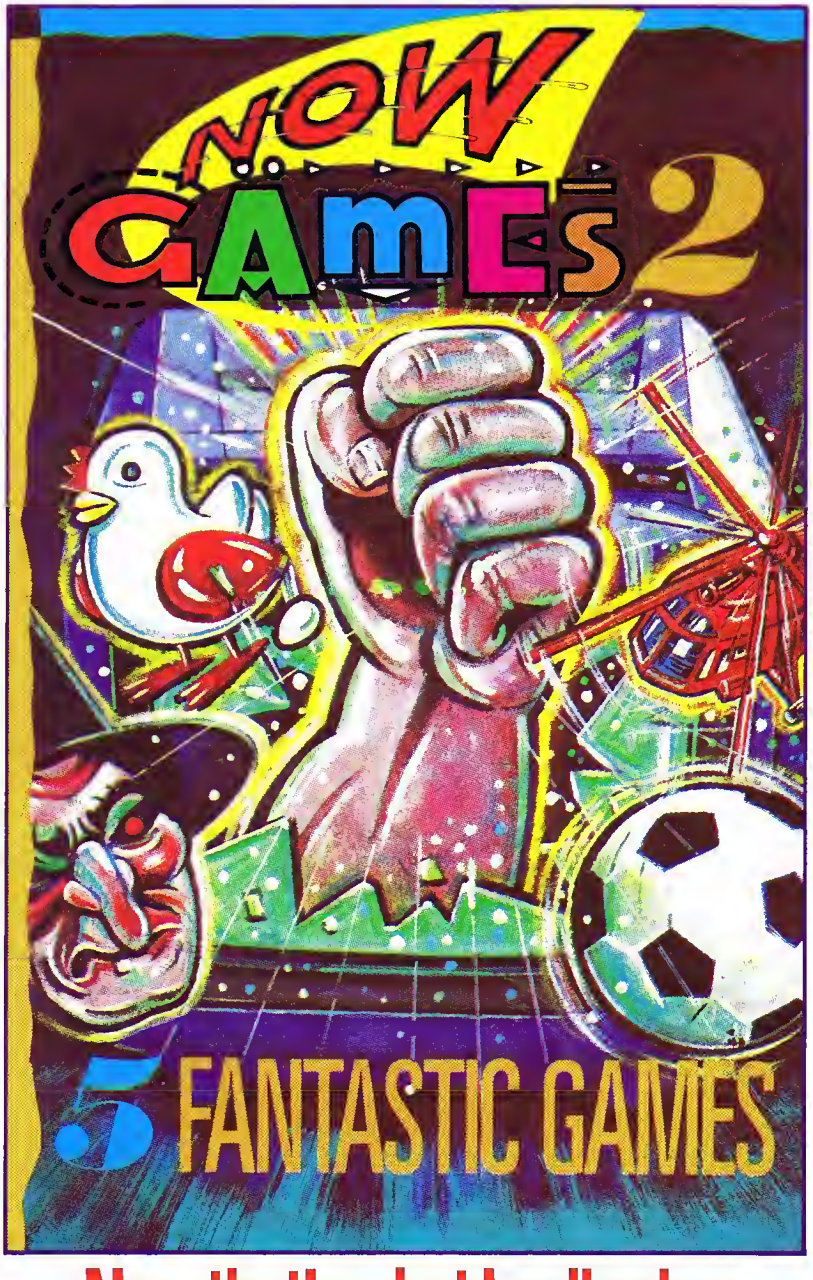
copyright and registered trademark H&P computers
Wolphaertsbocht 236 3083 MV Rotterdam Netherlands. Tel.: 01031 - 10231982 Telex 26401 a intx nl

Five Fantastic Games

Keep your eyes peeled for NOW GAMES 2. Five major software hits jostle for your attention on this packed-solid-with-fun cassette.

Available for COMMODORE 64 and SPECTRUM 48K and for only

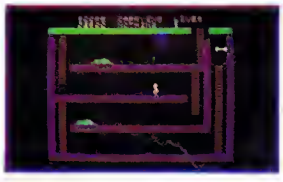
£8.95



1. AIRWOLF – Elite Systems Ltd
Stringfellow Hawke must use his helicopter to free five imprisoned scientists in this exciting arcade game which takes place in a subterranean terrorist base!

2. TIR NA NOG – Gargoyle Games
This remarkable interactive graphic adventure allows you to play the mythological Celtic, Cuchulainn, searching for the fragments of the Seal of Calum.

3. CAULDRON – Palace Software
Take up the witches' challenge and unravel the mysteries of this beautiful land in this striking arcade adventure.



4. CHUCKIE EGG 2 – A & F Software
Help Hen House Harry in the smooth running of the A & F Chocolate Egg Factory! He must find equipment and find out where to use it in this amusing arcade game.

5. WORLD CUP – Artic Computing
This great football simulation lets you re-enact the tough fight to the World Cup Final. Play a friend or the computer (a pretty tough opponent)!

All screenshots from the Commodore 64

Now that's what I call value

STILL AVAILABLE – NOW GAMES
featuring
Lords of Midnight, Brian Bloodaxe, Strangeloop, Pyjamarama, Arabian Nights and Falcon Patrol II
for only
£8.95

Available from all good software retailers

Also available directly from: Virgin Games Mail Order, 2-4 Vernon Yard, Portobello Road, London W11 2DX

SHEKHANA COMPUTER SERVICES

★★★COMMODORE★★★	RRP	OUR PRICE	★★★COMMODORE★★★	RRP	OUR PRICE
LORDS OF THE RINGS	15.95	11.95	ROBIN OF THE WOODS	9.95	7.50
LORD OF THE RINGS (DISK)	19.95	14.95	CRITICAL MASS	8.95	6.75
BIG DADDY ROCK+WRESTLE	9.95	7.50	EXPLODING FIST (DISK)	14.95	11.95
ELITE	14.95	11.25	HOBBIT	14.85	11.25
WIZARDRY	9.95	7.50	TRANS FORMERS	8.95	6.75
SUMMER GAMES II (CASS)	9.95	7.50	PACMAN	9.95	7.95
BEACH HEAD II	9.95	7.50	COMBAT LYNX	8.95	6.75
DR. WHO	14.95	13.50	PARADROID	7.95	5.95
MUGSY'S REVENGE	8.95	6.95	DESERT FOX	9.95	7.50
BLACKWYTCH (ULTIMATE)	9.95	7.50	SHADOWFIRE	9.95	7.50
DIARY OF ADRIAN MOLE	9.95	7.50	THE YOUNG ONES	7.95	5.95
BALLBLAZER	9.95	7.50	THEY SOLD A MILLION	9.95	7.50
SUPERMAN	9.95	7.50	RACING DESTRUCTION (DISK)	14.95	11.25
F. BRUNO'S BOXING	7.95	5.90	ARCADE HALL OF FAME	9.85	7.50
SKOOL DAZE	6.85	5.50	MIND SHADOW	9.95	7.50
FRANKIE GOES TO HOLLYWOOD	9.95	7.50	IMPOSSIBLE MISSION	9.95	7.50
SHADOWFIRE II — ENIGMA FORCE	8.95	7.50	WAY OF EXPLODING FIST	9.95	7.50
DONALD DUCKS PLAYGROUND	9.95	7.50	MERCENARY	9.95	7.50
BOUNCES (CRISES 3000)	9.95	7.50	MERCENARY (DISK)	12.95	9.95
SUPER ZAXXON	9.95	7.50	QUAKE MINUS 1	9.95	7.50
REO ARROWS	9.95	7.50	F15 STRIKE EAGLE	14.95	11.25
BLUE MAX 2001	9.95	7.50	MINI OFFICE	5.95	4.99
INTERNATIONAL SOCCER	14.95	11.25	LITTLE PEOPLE DISCOVERY KIT	14.95	11.95
ULYSSES GOLDEN FLEECE (D)	14.95	11.95	COLOSSUS CHESS 4.0	9.95	7.95
WORM IN PARADISE	9.95	7.50	SCOOBY DOO	7.95	5.95
COMMANDO (ELITE)	9.95	7.50	MASQUERADE (DISK)	14.95	11.85
SABREWULF	9.95	7.50	ANY MASTERTRONIC TITLE	1.99	1.99
LUCIFERS REALM (DISK)	14.95	11.95	HARVEY SMITHS SHOWJUMPING	7.95	5.95
AZIMUTH HEAD ALIGNMENT	8.95	7.50	THE YOUNG ONES	7.95	5.95
MICKY MOUSE (DISK)	14.95	11.95	IMHOTET (ULTIAMTE)	9.95	7.50
UNDERWURLDE	9.95	7.50	ZOIDS	8.95	6.75
SHADOWFIRE TUNER	—	3.99	GEOFF CAPES STRONG MAN	8.95	6.75
LITTLE COMPUTER PEOPLE	9.95	7.50	TRIVIA	7.95	5.95
KENNEDY APPROACH (DISK)	17.95	14.95	YIE AR KUNG FU	8.95	6.70
WINNIE THE POOH (DISK)	12.95	10.99	RAMBO	8.95	6.70
FIGHTING WARRIOR	9.95	7.50	STARION	9.95	7.50
WINTER GAMES	9.95	7.50	MONTY ON THE RUN	9.95	7.50
WINTER GAMES (DISK)	14.95	11.25	FIGHTNIGHT	9.95	7.50
SPY V SPY II	9.95	7.50	FIGHTNIGHT (DISK)	14.95	11.25
SKY FOX (CASS)	9.95	7.50	THE GOONIES	9.99	7.50
OUTLAW	8.95	7.50	THE GOONIES (DISK)	14.95	11.25
FIGHTER PILOT	9.85	7.50	ZORRO	9.95	7.50
PITSTOP II	9.95	7.50	BARRY McGUIGAN BOXING	9.99	7.50
WINNER THE POOH (DISK)	12.95	10.99	STEVE DAVIS SNOOKER	9.95	7.50
DRAGON SKULL	9.95	7.50	QUICK SHOT II — JOYSTICK	—	8.95

ALL PRICES INCLUDE P&P IN U.K. EUROPE ADD £1 PER TAPE. ELSEWHERE AT COST.
CHEQUES/POs PAYABLE TO: S.C.S., DEPT. CH, PO BOX 394 LONDON N 15 6JL.
TEL: 01-800 3156. SAE FOR LIST. *RING FOR AVAILABILITY

★★★★★★★★ OR ★★★★★★★★

IF YOU WOULD LIKE TO PICK UP YOUR DISCOUNT SOFTWARE FROM OUR SHOP, PLEASE BRING YOUR COPY OF THIS ADVERT TO: "COMPUCENTRE, UNIT 5, 221 TOTTENHAM COURT ROAD, LONDON W1" (NEAR GOODGE ST. STATION). OPEN 6 DAYS A WEEK 9.00AM-18.00PM. BARCLAYCARD AND ACCESS HOTLINE RING 01-631 4627 ONLY. GOODS DESPATCHED SAME DAY — SUBJECT TO AVAILABILITY.

Music Software.

Music made easy on your Commodore.

New!

Sound Sampler
Can be used to recorfd voice or sounds which can then be played back higher or lower in pitch, reversed, edited or looped. Can also be used as an Echo Chamber, pitch converter or drum machine. Comes complete with microphone.
£69.95

Sound Studio — Profeesional Syntheaizer and Recording Studio
Record music on three tracks (6 tracks with MIDI) either note by note like a word processor or in 'real time' as you play it on the keyboard. Play it back and 'Edit' if necessary. The synthesizer turns your computer into a sophisticated polyphonic synthesizer, with full control over all the usual sound parameters.
£14.95

New!

Music Keyboard Overlay
Low cost piano type moulded keyboard fits neatly over your Commodore 64.
£9.95

DIRECT MAIL MUSIC, 627 High Road, Leytonstone, London E11 4PA

Please send me items ticked. I enclose cheque/PO for £_____ which includes p&p charges. Visa/Access.
Tel: 01-539 3048 (p&p£1.95) (State if disk or cassette required).

Name _____

Address _____

Block capitals. Please allow up to 14 days for delivery. CH1

COMMODORE 64

DYNAMITE SOFTWARE

128 COMPATIBLE

C POWER £119.95 (d)
Fully implemented C Compiler for the 64, as defined by Kernighan & Ritchie. 541 page manual. Shell Program Manager, Screen Editor, Linker, Function Libraries and Text Formatter. Produces efficient and compact m/c.

OXFORD PASCAL £51.75 (d)
Full ANSI Pascal Compiler, with many extra commands, e.g. LINK, INCLUDE, CHAIN, plus many graphic commands. Comes with two compilers — disk and resident.

ZOOM PASCAL £24.95 (d)
Powerful subset of the Pascal language, producing fast m/c. Full screen EDITOR.

BASIC 64 £39.95 (d)
Professional BASIC Compiler. Compiles all C64 BASIC commands. Produces fast m/c. Many user options. Compiled programs run up to 50 times faster than BASIC.

ASSEMBLER 64 £11.99 (d) £7.99 (t)
Professional Development System. Program as easy as BASIC. LABELS, VARIABLES, PSEUDO OPS (.ascii, .base, .bit, .byte, .end, .out, .word), CONTROL COMMANDS (assemble, disassemble, save, load, display, stop, erase). PRINTING. Assembler and BASIC programs can be mixed.

MIKRO ASSEMBLER £50.00 (c)
The best Assembler available. Comes on plug in cartridge. COMMANDS — assembla, auto, delete, disassemble, find, format, number, table, tim. PSEUDO OPS — byt, end, Ink, off, out, txt, wor, *. Also powerful MONITOR. Print to CBM and Centronics printers.

DATABASE 64 £11.99 (d) £7.99 (t)
Menu driven database system, allowing up to 30,900 records, 255 character records. SETUP unlimited number of databases, ADD, INSERT, DELETE, AMEND, VIEW records. SEARCH for records on any field with pattern matching. Searches thousands of records in UNDER 1 SECOND. SCROLL through records, PRINT records and reports. SAVE and LOAD to disk or tape. Supports disk and tape users. On line help screens. Full manual.

FREE ASSEMBLER 64
OR GAME, DISK OR TAPE
WITH ALL ORDERS OVER £15. ORDERS OVER £50 MAY ALSO HAVE A FREE BOOK (CHOICE OF 20 BOOKS)

DYNAMITE SOFTWARE (Dept. CH)
27 Old Gloucester Street
London WC1N 3XX, England

INSTANT RECALL £19.95 (d) £17.95 (t)
Powerful database system for C64. Unlimited number of databases, each up to 31,000 records. Records up to 255 chars. Search on any field, or across fields with pattern matching, or by record number. Matches Upper and Lower Case. Searches 5,000 records in half a second. Design reports or labels. PRINTS on any CBM or CENTRONICS printer. SCROLL backwards and forwards. DISK DIRECTORY. SAVE and LOAD databases to DISK and TAPE. Supports disk and tape users. On line Help Screens. Dozens of other features.

WORD PERFECT £21.95 (d) £19.95 (t)
Professional word processor system. Easy to use. Many advanced features — Insert/Delete lines, Move/Copy/Erase text, Margins, Tabs, Centre text, Find, Reformat, Scrolling, Proportional spacing plus dozens of other features.

BUSICALC £21.95 (d) £19.95 (t)
Advanced electronic Worksheet (Spreadsheet), up to 1,200 cells, move around sheet, Jump, Save, Load, Replicate, Insert, Delete, Print, Walk, Format, Quit, Colour, Formulae evaluation, rounding and much more.

SUPERBASE 64 £79.95 (d)
Fully featured database information system. Up to 1,000 chars per record on up to four screens, and up to 128 items per record. Fields definable as key, text, numeric, constant, result or date, in files of up to 16 million characters. Superbase also has Spreadsheet and calculator capability, calendar functions, sorting/searching, menu and command driven, fully programmable, definable reports and much more.

MICRO MAGPIE £39.95 (d)
Advanced database management system. Create database tailored to your exact needs. Manipulate data between different files, perform calculations, print reports and graphs, fully programmable, pop-up menus, search on any field, works with one or two disk drives, CBM and CENTRONICS printing and much more.

BRIDGE CARTRIDGE £19.95
FORTH CARTRIDGE £29.95
OTHELLO BOARD GAME £7.95 (d) £5.95 (t)
MONITOR CARTRIDGE £28.95
BLITZ BASIC COMPILER £50.00 (d)
PASCAL 64 COMPILER £39.95 (d)
SUPER DISK UTILITY £12.50 (d)
GRANDMASTER CHESS £17.95 (d) £17.95 (t)
SCRABBLE BOARD GAME £15.95 (d) £12.95 (t)
ANATOMY OF THE C64 BOOK £12.95
STAGSOFT RESET BUTTON £5.95

All orders normally despatched within seven working days. Overseas orders add £3.00.

GRAPHICS DESIGNER 64 £19.95 (d)
Menu driven Graphics Editor. Create high res. pictures, with keyboard, light-pen or joystick. Draw lines, boxes, circles, ovals, triangles, full with colour, add captions. Create slide shows. Applications include design, engineering, graphic art and games. Many other features.

1541 FLASH £89.95 (kit)
Speeds up 1541 disk drive by over three times. Compatible with all commercial software. Leaves cartridge and user port free. Several other features. Easy to fit.

ANATOMY OF THE 1541 DISK DRIVE £12.95
300+ page technical guide to the 1541. ROM disassembly with comments, disk commands, data storage, DOS operation, relative records, direct access, disk structure, programs and much more.

FRENCH 64/GERMAN 64 £12.95 (d) £8.95 (t)
Both packages £16.95 (d) £12.95 (t)
Two excellent educational language packages. Both teach with user involvemant — each contains nine lessons, teaching and testing verbs, grammar, spelling and sentences. Topics include numbers, time, colours, weather, shopping, clothes, animals and many many more.

BEGINNING RUSSIAN ON THE 64 £13 (d) £9 (t)
The only RUSSIAN educational package for the 64. Contains the full Russian alphabet. The package is divided into three sections — introduction to the Russian alphabet, vocabulary, exam and a look at Moscow (excellent graphics).

CHECKBOOK MANAGER £12.50 (d)
Computerise your cheque-book. Information stored on a disk file, including cheque number, date, payee, amount, bank balance, and a returned indicator. Transactions may be listed to screen or printer. Other features.

STAT 64 CARTRIDGE £28.95
STAT 64 adds 19 statistical commands to your BASIC — Bar charts (histograms) horizontally or vertically, plotting with 64,000 points, screen dump, mean value, standard deviation, variance, etc.

CHARTPAK 64 £24.95 (d)
Professional package which produces charts in high res. mode. You can Enter, Edit, Save and Recall data easily. Chartpak interactively builds charts — pie, bar and line. You control scaling, labelling, and position of chart. Charts created in eight modes. Send final results to CBM 1515, 1525 or Epson MX-80 or FX-80 printers.

All programs come with a comprehensive manual. Send 22p stamp for catalogue (overseas £1.00).

To all C16/Plus 4 and Electron Users

Tynesoft's January big name and value for money releases – watch out for our new titles on your machine every month in 1986.

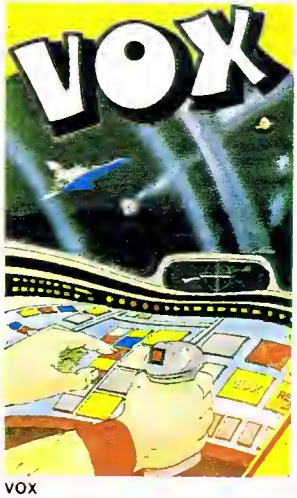
FOR THE C16/PLUS 4, STARTER PACK 2

APOLLO RESCUE
Apollo Rescue Mission is a two part game, challenging and full of action Your mission is to retrieve and reassemble sections of the ill fated Apollo 16 scattered over the lunar surface Assembly of rocket must be done in the correct order to enable you to complete your task and blast off to a new universe Beware of those dangerous aliens, that have to be eliminated with your laser The second part of the mission is to retrieve Satellites floating in space with the use of a special arm, to be returned to earth for servicing

AUTOBAHN
A fast Arcade game where your driving skills are tested to the full. Your brief is to take out a new prototype car on a stretch of the German Autobahn and put it through its paces
You have to complete 4 challenging tests before your job is finished

WATER GRANDPRIX
You are in the driving seat of a powerful speed boat entered in the Annual Water Grand Prix
Skill is needed to navigate your boat along the twisting river Avoiding the river banks and passing your fellow competitors along the way to victory

R.R.P. **£14.95**



VOX
You have to defend the 8 Cities of the planet VOX from the aliens invasion force You must destroy the alien craft by moving a sight over the screen and firing guided missiles to the sight s location There are 40 levels Each level consists of a set number of alien craft but an unlimited number of Ammo Saucers and Stunt Planes To complete a level you must destroy all the aliens apart from Ammo Saucers and Stunt Planes

FORTHCOMING RELEASES:

POGO PETE · MOUNT VESUVIUS · WINTER OLYMPICS · GUNSLINGER · JET SET WILLY

FOR THE BBC/ELECTRON

IAN BOTHAM'S TEST MATCH

We think the best sports simulation yet on the BBC Electron and special features include
Four Bowling Options. Four Batting Options. One Player Mode. Limited Over game (16 overs). One Day game (32 overs). Test Match (Two full innings). Demonstration Mode

R.R.P. **£7.95**

RIG ATTACK

One of our value for money tapes at a R R P of £4 95 Rig Attack is an action packed game demanding skill and quick reflexes to guide your helicopter from rig to rig without coming under attack from enemy submarines The submarine is equipped with the latest missiles, your copter carries short range bombs that need to be dropped at low altitude to reach that darting submarine in the waters below

R.R.P. **£4.95**

Other leading titles for the Electron in the near future
JET SET WILLY
NINJA CHALLENGE

TYNESOFT
COMPUTER SOFTWARE

To make sure you find out about all our exciting new releases and register on our mailing list fill in the Registration Form below, making sure to state your machine and send it to:

Tynesoft Computer Software, Addison Industrial Estate, Blaydon, Tyne & Wear NE21 4TE.

Title (Tick) Mr Mrs Miss

Initials

Surname

Address

BBC/Electron

C16/Plus 4

Post code

Telephone no. (including STD code)

TROJAN CAD-MASTER

THE ULTIMATE IN GRAPHICS TOOLS

SUPERB GRAPHICS SOFTWARE
PLUS
A TOP QUALITY LIGHT PEN

CBM 64

Discover the exciting world of creating your own graphics on screen.

- **FREEHAND DRAW** - 5 pen thicknesses inc. Quills
- **PAINT BRUSH** - for the artistic touch
- **FILL ANY SHAPE** - use 16 colours and 11 patterns.
- **GEOMETRIC SHAPES** - circles, boxes, triangles, lines & banding.
- **DYNAMIC RUBBER BANDING** on all geometric options.
- **PIN-POINT FUNCTION** - for pixel accuracy on all functions.

Plus many more too numerous to mention in this ad. All these features in the Program + a top quality Light Pen and an Instruction booklet in one reasonably priced package. Easy to use for creating colourfull pictures or technical drawings. Ideal for use by all ages of micro users. Full back-up service from manufacturers. Available at good dealers or direct from Trojan Products.

ONLY £19.95 per pack.

TROJAN

Micro Computer Software & Accessories

Send cheque/P.O. to.
TROJAN PRODUCTS
166, Derlwyn, Dunvant, Swansea SA2 7PF
Tel: (0792) 205491.
TRADE ENQUIRIES WELCOMED

HIRE HIRE

COMMODORE 64 GAMES LIBRARY

- 1200 plus titles
- Return of post service guaranteed
- Full 7/14 day hire
- Up to 4 games at once
- Only originals used
- Each member gets a full joining kit
- Weekly hire as low as 40p

No joining fee required — first 2 games free
What do you have to lose?
Write for details to:

COMMODORE 64
GAMES LIBRARY
c/o The Yorkshire Software Library
Unit M11, Stanningley Industrial Centre
Pudsey, West Yorkshire

EVER HAD A LOADING PROBLEM?

Then send off for WIZARD'S TAPE HEAD ALIGNMENT KIT — no one should be without one!

By far the most common cause of loading failure is bad alignment of your tape heads. All cassette units can become out of alignment with use and may have been incorrect from the start. Our alignment kit will allow you to precisely set up your tape heads for the best possible loading conditions. In many cases this will make a remarkable difference in loading reliability especially of fast loading programs.

Our kit comprises of:
(1) A precision recorded cassette containing a sophisticated test program; (2) A special adjustment screwdriver; (3) A direction indicator; (4) A turning meter; (5) A detailed instruction booklet with diagrams; (6) A Loading Doctor — to help you diagnose any loading problems. All of this for only £6.95!!!

COPY KING

- ★ Revolutionary new copier for FAST LOADING programs.
- ★ Copies many of the TOP games!!!
- ★ Striped loaders, picture loaders, etc. handled with ease.
- ★ Back up copies are made on blank TAPES at fast speed (faster than disc!)
- ★ Extremely easy to use — no technical knowledge required.
- ★ No additional hardware and no second cassette reocrder are required.
- ★ We believe this 100% machine code copier is unrivalled in performance.
- ★ Buy the market leader. Great value at £7.95.

HALF PRICE SPECIAL THIS MONTH!!!

Copycat and Lightning Load together for only £5.95. Usually £5.95 each

COPYCAT

- ★ Our highly popular back-up copier for Commodore/standard rate loading systems
- ★ Thousands sold in the last year
- ★ Copies almost all protected software using the Commodore/standard rate system onto blank tapes.
- ★ Wizard sound effects. Cassette magic sense.

LIGHTNING LOAD II

- ★ Converts almost all your slow loading games/programs into SUPERFAST TURBO loading versions on tape.
- ★ The tedious wait for loading is over when you buy this excellent program.

Overseas orders welcome. Europeans please add 50p. Outside Europe add £1. U.K. postage free. Rapid despatch of orders. Cheques/POs to:

WIZARD SOFTWARE (Dept. H)
59 THE MARLES, EXMOUTH, DEVON EX8 4NE

---

* BACK-UP-SYSTEMS FOR CBM-64 & VIC-20 *

The **BACK-UP-BOARD Mk 1** is the fastest, end eesiest way to beck up your tape programs. With this boerd you can connect CBM cessette deck to your computer. You can copy a progrem on the second deck while it loeds from the first. You cen back up ell fast loeders, data files, etc. BACK-UP-BOARD Mk 1 £10.00 inc. p&p.

BACK-UP-BOARD Mk.2. This new version of our famous BACK-UP-BOARD is now proving so popular it is outselling our originell Mk.1. this new boerd now works two weys. Switched to 'NORMAL' it operetes as the Mk.1. Switched to 'GENERATE', '64' owners cen use our speciel transfer software to regenerate e copy of e program on the second deck es it loeds from the first. This method can produce e better quelity copy then the originel. BACK-UP-BOARD Mk.2 and softwere £14.50 inc. p&p. Conversion service. Return your Mk.1 Board, if purchased from us, to be modified to Mk.2 for £4.50 including softwere and p&p.

AZIMUTH HEAD ALIGNMENT TAPE BY INTERCEPTOR for '64'. Use this tape with your '64' to adjust the heads of your decks to make e perfectly matched peir. Full instructions end screwdriver supplied. £8.50 inc. p&p.

ROM SWITCH/RESET BOARD. Fit this boerd in the expension port of your '64' end you cen reset ALL progrems. Resets progrems thet e stendard reset switch can't. A socket for e 2764 8K eprom is elso fitted. Full instructions supplied. £8.95 inc p&p.

Please send s.a.e. for more deteils of the ebove products.

Send your cheque/PO to:
TURBOTRONIC (Dept. C.H.)
46 Ripon Street, Parkinson Lane, HALIFAX, West Yorkshire HX1 3UG
Tel: (0422) 52020
(Europe edd 50p, outside Europe edd £1.50)

C16 WORD PROCESSOR – TEXT 16

Powerful word processor. Facilities include: Auto centre text, insert, amend, delete, copy, move, save, load text, variable tab, word count, right justify etc. Fully menu driven for ease of use. Superb value.
Commodore 16 — *cassette £5.95*, *disk £7.95*

C16 FILE – DATA 16

Takes the place of any card index. Facilities include: full sort, add amend, delete records, password protection, save/load file, direct and special searches, print all/part records, variable fields etc.
Commodore 16 — *cassette £5.95*, *disk £7.95*

All programs with full documentation and guarantee and can be used with all direct connect C16 printers including 1520 printer/plotter, if required. Price includes VAT, packing and fast delivery by 1st class post.

Cheques/PO's to: **A & C SOFTWARE**
Dept. 1, 75 Oakthorpe Gardens, Tividale
West Midlands B69 2LF 021-557 8596 (7-9 pm)

CLASSIFIED

COMMODORE 64 DATABASE — DATAFILE

Powerful options include: print all/selective records, delete, amend, save, load, copy, alphanumeric sort, user defined fields, memory check, total numeric fields, multi field interrelational, global and between limits searches, etc. Fully menu driven with comprehensive easy to use instructions.

CBM 64 (compiled) cassette £7.45
CBM 64 (compiled) disk £10.45

COMMODORE 64 WORDPRO — TEXTFILE

Powerful word processor, facilities include — lerge text buffer, auto centre, variable tab, insert, amend, delete, copy, move text word count, right justify, paging, join files, multiple file handling, print all/part text etc. Fully menu driven with comprehensive easy to use instructions. Great value.

CBM 64 (compiled) cassette £8.25
CBM 64 (compiled) disk £10.75

All programs with full documentation and guarantee and can be used with all direct connect CBM64 printers including 1520 printer/plotter. Also most centronics (with suitable hardware interface). Price includes fast delivery by first class post. Cheques/PO's to:

A & C SOFTWARE
Dept. 1, 75 Oakthorp Gardens,
Tividale, West Midlands B69 2LF
021-557 8596 (7-9 pm)

IF YOU CAN MEET THE MIND CHALLENGE OF
HIT & MISS
DEMAND YOUR COPY NOW COMPLETE WITH FREE POSTER BEFORE IT'S TOO LATE
COMMODORE C16/Plus 4
VENTUREGATE LTD

CBM64 SOFTWARE for sale. Superbase Starter £20; Ghost Chaser £5; Tour de France £5; Psychedella £3; Mr Men Word Games £5; Sparklers Special £3; Willow Pattern £2; Thunderbirds £2; Winnie the Pooh £8 (disk). Phone (0656) 860207 — Philip.

COMMODORE-64 backup interface. Copies all types of programs, turbo's etc. From Datassett to Hi-Fi cassette. (Specify DIN or Phono plug.) £7.95. McQuade, 55, Shaftsbury Drive, Heywood, Lancs. OL10 2PH.

FOR SALE C64 in good condition and boxed, asking for £130 + £5 for postage. Ring Nick on 021-551-0451 after 6pm.

CBM 64 computer compendium, includes, C2N, Music Maker, Designers Pencil, Adrian Mole, Book and Game, £175. Also a 1541 disk drive, bought recently with 10 blank disc and disc games, cost £275, sell £180. Tel: 01-723 6107 or 01-267 7856.

1541 HEAD ALIGNMENT SERVICE, £12.50 P&P free! Fast Turnaround, send you unit to:- B Miller, 31 Greenway Road, Widness, Cheshire, WA8 6HE, make your cheque payable to: B Miller. Tel: 051-423 5493 Cnet: BM4 Prestel 514235493 for further details.

CBM 1541 D/DRIVE plus 801 printer including £100 of s/w extras, Wordcraft 40 speech synthesiser, £250 ono for all or will sell separately, guarantees for d/drive and printers available. Tel: 01-693 0343 any evening.

VIC-20 including C2N cassette, 32K Ram pack fully switchable, Introduction to Basic part 1, 8 cartridges, 21 tapes, over 100 programmes to input. £85 for the lot, phone: (0203) 474050.

BRENDENS BASIC £15 (disc). VIP Terminal Emulator communications program £15 (disc). Sublogic Flight Simulator 2 £15 (disc). RTTY/Morse code communications program £15 (cartridge). Turboprint/Turbobuffer centronics printer interface £30. RS232 interface £5. All with instructions. Telephone Dr Gray on 0946 822320.

FOR SALE. Commodore Plus 4 + cassette + joystick + 10 games as new. £80 the lot. Phone Dawlish 864801.

VIC 20 BRIDGE: Two original 15K programs enabling solo practice, b idding and play. Send £15 plus C10/12 cassette in s.a.e. to A. J. Hilton, 150 Harefield Road, Uxbridge UB8 1PW. Phone 0895-39100 for further information.

COMMODORE 64 Computer + 1541 disk drive + tape deck + 2 joysticks + hundreds of games and utilities mainly on disk and a few books. The lot, £350. Tel. Andrew 01-848 4147.

QUICK SALE Modem for 64 boxed as new £45. Interdictor Pilot £10. Romik Multisound Synthesiser £8. Activision Decathlon £5. International Football £8. All cassettes as new. Phone Leicester 0533 693820.

C16 OWNERS. I have 3 spare games to sell or swap: Olympiad, Xargon Wars, 3D Time Trek. Phone Seaford 893638 or write to: Jason, 104 Barn Rise, Seaford, Sussex BN25 3DD.

SALE, CBM64, C2N, Speech 64, 2 Joysticks plus software and much, much more. Value £500 — selling for bargain £300. Tel. (0902) 711247 ask for Haffiz.

COMMODORE 64 with 1541 Disk Drive, 1701 Colour Monitor, Easy Script and Joystick, Manuals, £420 o.n.o. 01-226 8688 after 8pm.

CBM64 software to swap. We have over 1500 games. M. & B. Kruiter, Marsstraat 32, 8303 AM Emmeloord.

SAVE £1.50

MERCENARY for CBM64 by Novagen **ONLY £8.45** (plus 50p p&p)

You will not be able to leave it alone!!

This exciting game has good 3-D vector-graphics which, with the high speed ection, create e very realistic experience.

A unique combination of flight simulator, adventure and arcade type game.

Send your name and address, together with cheque/PO for £8.95 to:

D. J. MORGAN
Dept. CH286, Kites Nest, Roundthorn, Ludlow, Shropshire SY8 3EN

GET YOUR HEAD TESTED

Good advice for all CBM 64 users!

Our work on cassette recorders reveals that the majority of tape loading errors stem from incorrect head alignment.

This can be easily and quickly corrected using our Azimuth Alignment tape costing only £4.95. Suitable for C2N or any Commodre compatible recorder. "Best fiver you'll ever spend" — PCW review.

Order now. Depatch by return. Access or Visa welcome.

CHALLENGE RESEARCH, 218 High Street, Potters Bar, Herts. Tel: (0707) 44063

COMMODORE Business System. CBM64, CBM1526 Letter Quality Printer, 1541 Drive, Recorder. Language Upgrade, Assembler & Music Roms. Word Processer, finance & 4 Education packages. Games, manuals, books, light-pen (stack), HIFi Interface, joysticks, spare disks (16). Cost £1300, sell for £800. Phone Wigan (0942) 831358.

MODEM & EASY SCRIPT for sale (new). Reasonable offers please. CBM64 software to swap, many titles, send list to: D. Smart, 95 Western Road, Newhaven, East Sussex BN9 9JN. Tapes and disks. May consider selling software.

FREE RAID OVER MOSCOW! When you buy Ghostbusters, Mama Llana, Storm Warrior, Metagalactic Llamas, Kokotoni, Wilf and Fantasy Five for £25 the lot. Worth over £60. Phone Ireland 021-334270.

FOR SALE future Finance (Boxed — Manual — Duplicate Disks) £50. Gemini 'Hommac' Home Accounts Disk £12.50 (half price). Phone 0582 (Luton) 595467 — evenings or weekends.

FANTASTIC BARGAIN Vic-20, C2N cassette deck. 20 tapes, 2 user books. All this for £70. Ring Tarvin 41351 Mon-Fri after 5pm-9pm; Sat-Sun after 10am-9pm. Ask for Mike.

NEW COMMODORE 64 software on disk or cassette. I have GARGLE Champ, Dan Dare, Winter Games and many more new games. For information write to: N. Arntz, Osdoreperweg 565, 1067st Amsterdam or phone 020-190669.

SOCCER MANAGER — manage your own team. RACE NIGHT — Horse Racing — Party Fun. £4.95 each or both for £7.50. K. Palmer, 59 Old Park Road, Sheffield S8 7DS.

HOME ACCOUNTS

Put your house in order! Probably home computing's best use! Comprehensive coverage of bank accounts. Credit cards, HP in-built accuracy check. Records all transactions. Projects cash-flow for any period ahead. Available for all Commodore machines. £8.45 or *free* details from:

Discus Software
Freepost,
Beach Approach
Brixham TQ5 8BR
Tel: 08045 55532

COMMODORE REPAIRS

Commodore repairs by Commodore approved engineers. Repair prices: Vic 20 modulator **£8.05**, Vic 20 **£15.00**, CBM 64 from **£20.00**, C2N from **£9.00**, 1541 from **£20.00**, C64 psu **£13.50**, Spectrum **£16.50**, Oregon **£32.00**, Electrons, Atari. For more information SAE or telephone:

G.C. BUNCE & SON,
36 Burlington Road, Burnham, Bucks SL1 7BQ.
Tel: (06286) 61696.

FOR SALE original software at 50% off plus a free original game with every order over £10. Games include Zaxxon, High Noon, P. Position. Write to: Mark Hawkins, 105 Stitch M1 Lane, Harwood, Bolton. Please include SAE.

QUICK SALE Commodore 64, MPS801 Printer, 1541 Disk Drive. Software includes Easyscript Intro to Basic part-1. 6 games, DOS support. Condition new. £325 o.n.o. for the lot. Phone 01-958 8389. Ask for Sunil.

8032SK COMPUTER. As new £300. 4032 (Upgrade 3032) £125. MPS801 printer new, unused £90. 64 Modem new, unused, year's Compunet subscription £70. 64C/PM package new, unused £35. All plus carriage. Phone Helensburgh (0436) 3022.

DISK COMMANDER 64 (V2.O), Utility disk for 1541 disk drive, UN SCRATCH, DISK COPY, DELETE DIRECTORY, ENDLESS DIRECTORY, FILE PROTECTOR, DISK & DISK DRIVE DOCTORS, + 12 MORE FULL INSTRUCTIONS — HARDLY USED. £15.00 Brampton, Croome Rd, Defford, Worcs.

CBM64, Disk Drive, MPS801 Printer, 1701 Colour Monitor, Koalapad Graphics Tablet, over 300 games etc on disk such as Winter Games and Little Computer People. Worth well over £1300. Reasonable offers only: may split. Delivery possible. Tel. (0527) 24340.

ORIGINAL CBM64 tapes. Over £300 worth. Sell for £150 or swap for good condition MPS801 printer. Contact: Kevin Young, 72 Thimbler Road, Canley, Coventry CV4 8FL.

GAMES FOR SALE from £1 to £8. Titles include: Falcon Patrol, Spitfire, Ace, High Noon, Flight Path 737 and many more for CBM64. For a full list send s.a.e. to Dave, 26 Harcourt Street, Beeston, Notts NE9 1EY.

CLASSIFIED

GADGET £5.95
This 100% Machine Code C8M64 cassette utility offers: Append, Delete, Re-number (including Goto Gosub, etc.). A programmer's aid: satisfyingly simple to use.
Send your name, address and PO or cheque for £5.95 (p&p free) to:
J&J GILMOUR LTD
Dept CH286, 4 Copse Close, Liss, Hampshire GU33 7EW, England
Tel: 0730 893430

CBM64 GAMES for sale. Sherlock, Quovadis, Valhalla, Hobbit, Heroes of Karn, Zensi. £4.50 each. Patrick Moore's Astronomy, Know Your Own Personality, Rock'N'Roll, £3 each. All originals. Please write to: Jeremy O'Sullivan, 34 Wilton Gardens, Cork, Ireland.

C16 STARTER PACK. Quickshot II, Joystick, 8 great games including Berks 3, Daly Thompsons Star Events, Scramble, BMX Racers and 5 other great titles. Joystick adapter, excellent condition. Quick sale needed, please - only £50 o.n.o. Excellent bargain.

FOR SALE Trojan Light Pen for Vic 20 with Super Expander, only three months old — full instructions included — £10. Write to: 51 Whitefield Crescent, Newtown St, Boswells, Melrose TD6 0PX or phone 0835-22515.

TO SWAP

TO SWAP or sell . . . 1985, Duck-Shoot, Starace, Niterider, Robin-Rescue, Revenge of the Mutant Damels. All for £4.00 or swap all above, plus, Super Huey, For-Rescue on Fractalus. Will sell Huey for £7-£8.00. Phone evenings: Matthew, (Barry) 738280.

CB64 SOFTWARE to swap: disk only. All the latest American and British games plus utilities. Wanted: CBM128 software. Send your lists to: Mick Nolan, 11 Langton Road, Wigston Magna, Leicester LE8 2HT.

SUPER SWITCH 64
DO YOUR RUN/STOP AND RESTORE OFTEN FAIL? THEN YOU NEED SUPER SWITCH 64. FOR ONLY **£5.99** YOU GET A RESET SWITCH WHICH PLUGS DIRECTLY INTO YOUR CBM 64 PLUS A FREE SOFTWARE TAPE WHICH CONTAINS A RECOVERY PROGRAM (PRICE INCLUDES P&P, OVERSEAS ADD £2.00. MAKE CHEQUES/PO PAYABLE TO:
J. M. ROBERTS
34 Gloucester Avenue, Blackpool, Lancs FY1 4EJ

C-16 AND PLUS/4 software to swap: more than 100 programs, arcade games, adventures, strategy and card games, utilities, databases, etc. Please write for complete list to Aldo Bordieri, via Maiocchi 19, 20129 Milano, Italy.

C64 OWNER would like to swap software (disc format) and Pen-Pal with anyone in the world. Write to David Kurtz, 17 North Ash Street, Sandwich, Illinois 60548, U.S.A. All letters answered.

FINNISH 64 owner wishes to swap original software. Have already many titles. Let's hear from you overseas 64'ers. Post your lists soon. All letters answered. Also info and tips wanted. Please contact: T. Kouhia, 08680, Muijala, Finland.

I WANT TO SWAP CBM64 software with people all over the world. Disc only. Send your list to Tom Mustonen, Louhikkotie 15, BC 757, 00770, Helskinki, Finland.

CBM64 USER willing to swap programs with anyone, anywhere in the world. Contact: Paul Flanagan, 6 Corry, Belleek, Co. Fermanagh, N. Ireland or phone Belleek 594.

COMMODORE C.16/+4 CASSETTE HIRE
AT LAST! All the top games available for the C16 can now be hired from:
DABSOFT
Library constantly updated as new games become available. Membership fee of **£6.50** includes 2 **FREE** rentals!
OVER 130 TITLES
Once price for any game. Charge of £1.25 inc P&P BOTH WAYS.
For complete membership kit post cheque or postal order to:
DABSOFT (CH)
39 Guildford Road, Levenshulme M19 3FG.

CBM64 SOFTWARE to swap or sell. Over 700 Games, Utilities, Business Programs on disk or tape. Lots of American stuff and always looking for more. Your list for mine. To Alfredo Perillo, via F. Terracciano, No. 212, Pomigliano d'Arco, 80038 Napoli, Italia. I promise to answer all letters — thanks!!

C-64 USERS look here!! I have about 1300 titles to swap, including: Commando; Zorro; Ramboy; Neverending Story; and a lot of other 'hot new' games. Send for list to: Oyvino Svele, Ulsbergjanet 77, 42033 Forkus, Norway. Up: (04) 576771. Wanted: Goodbye Doo; Street Hawk.

COMMODORE 64 games to swap on disk only. Large collection to swap, no time wasters please! For more information send list to: N. Bateman, 56 Gorsedale, Sutton Park, Hull, Humberside HU7 4AT, England.

COMMODORE 64 games to swap (tape only). I have over 500 games including Winter Games, Who Dares Wins 1&2, Paradroid. Send your list to: Robert, 46 Erskine Road, Hartlepool, Cleveland. All letters will be answered.

MOONRAKER £6.95
C8M64 Space Game features fast: Fly-Into Rolling Radar Display; Infra-Red Target Screen.
Altitude, Time, Score Indicators/ Purchase Option, Promotion!
Send your name, address and PO or cheque for £6.95 (p&p free) to:
J&J GILMOUR LTD
Dept CH286, 4 Copse Close, Liss, Hampshire GU33 7EW, England
Tel: 0730 893430

CBM64 GAMES to swap. Over 400 games including Rambo, Commando, Who Dares Wins, Paradroid, Elite, Sladshot, William Wobbler, Mercenary, Digital Drums, etc. Nearly all in Turbo Tape only at the moment but changing to disk soon. Phone Letchworth 672338 after 5pm and ask for Chris.

COMMODORE 64 games to swap. Over 450 top names, top games, tape only. I won't waste time, so write today for a quick return. Try to send list. 1 Sandringham Gardens, Whitby, Ellesmere Port L65 9EY, England. Thanks!!

WANTED: Free Frame in exchange for original C64 software. Also new C64 original games wanted, especially sports games. Tape only. Phone Graham on 0365 23367 Evenings.

VIC 20 PEN PAL wanted: to exchange ideas and information. Write to: 'Dunvegan', Devonburn, Lesmahagow ML11 9PU. All letters answered.

CBM 64 GAMES to swap, disk only, many titles eg, Commando, Fight Night, Rambo, Skool Daze, write to Julian Smith, 45 Maple-Croft Cres, Sheffield S9 1DN. All letters answered. Send disk for list if you prefer.

SWAP Bugblaster, Killer Watt, Confuzion, 1985, The Day After, Panic Planet, Bat Attack and Haunted House for any latest top ten game (C64), phone: 01-274 9820 after 6pm.

Here's my FREE Classified Ad.

(PRIVATE ADVERTISERS ONLY)

PLEASE WRITE YOUR COPY IN CAPITAL LETTERS ON THE LINES BELOW
AND REMEMBER TO INCLUDE YOUR ADDRESS WITHIN THE COUPON

NAME.....

ADDRESS .....

.....

.....

TELEPHONE .....

Please cut out and send this form to:

CLASSIFIED DEPARTMENT
COMMODORE HORIZONS
12-13 LITTLE NEWPORT STREET,
LONDON WC2R 3LD

ALSO... NATAL CHARTS FOR VIC 20 + 16K

ASTROLOGY

Wide range of Self-teaching and Accurate Easy-to-use Calculation Programs for the Commodore 64 and PET.

Natal, Progressions, Transits
Synastry, Composite, Relationship
Harmonics, Midpoints, Solar/Lunar Returns, etc.

For more details please send *large* sae to:

ASTROCALC

67 Peascroft Road, Hemel Hempstead, Herts HP3 8ER. Tel: 0442 51809

SUPER BREAKER BACK-UP BOARD FOR THE CBM 64, CBM 128 AND VIC-20

****** THE BEST VALUE FOR MONEY BACK-UP BOARDS FOR CBM COMPUTERS ******

When a second CBM type cassette unit is connected to this board it will make back-up copies of cassette based software, including Turbo-Fast loaders, Machine code and/or Basic and Data Files. Very user friendly the back-up copy is made on the second cassette unit while the original is loading on the first. No additional software is needed. Price just **£8.95** plus p&p. Why pay more? You have read the rest, now buy the best. Need we say more.

RESET CARTRIDGE **** FOR THE COMMODORE 64 ****

Simply insert this Reset Cartridge into the cartridge port of your 64 and you can reset all memory resident programs, which includes all programs that standard reset switches fail to reset. This Reset Cartridge really works on ALL programs. Priced at **£7.95** plus p&p.

Add 55p p&p UK, Europe add £1.00 and elsewhere add £2.00. For Recorded Delivery in the UK add 25p extra or add £1.25 extra for Registered Post abroad. Send a cheque/PO, or send a stamp for full details to:

CLARK KENT SOFTWARE, 26 NORTH CAPE WALK, DANESHOLME, CORBY, NORTHANTS NN18 9QQ

For enquiries please ring (0536) 742622

SOFTWARE UNLIMITED DISCOUNTS
All Commodore 64

Game	Price	Game	Price	Game	Price
F.G.T. Hollywood	£7.30	Exploding Fist	£6.90	Whem! Music Box	£6.99
Elite	£11.20	Now Games	£6.50	View to a Kill	£7.70
Winter Games	£7.10	Hypersports	£6.55	Jump jet	£7.10
Combat Lynx	£6.30	Spy v Spy	£7.10	Theatre Europe	£7.50
Skyfox (tape)	£6.95	Wizardry	£6.95	Terromolinos	£4.99
Codename Mat 2	£6.49	Journey	£5.70	Spy's Demise	£6.95
World Baseball	£5.90	Cauldron	£5.75	Hacker	£6.99
Nick Faldo Open	£7.50	Battle of Bulge	£7.35	Red Moon	£4.99
Robin of Sherwood	£6.95	5S Compilation	£3.70	Thing on a Spring	£5.70
Paradroid	£5.80	Wizzardslair	£6.50	Beach-head II	£7.10
Nods of Yesod	£7.50	Blackwyche	£7.10	Frank Bruno	£5.55
Fighting Warriors	£6.50	Pitstop 2	£7.60	Spy v Spy 2	£7.10
Super Zaxxon	£6.95	Sabre Wolf	£6.95	Super Huey	£6.95
Racing Destruction	£9.50	Blue Max 2001	£6.95	Arch of Yesod	£5.99
Strip Poker	£7.70	Jet Set Willy 2	£6.70	Little Comp People	£6.99
Daley's Supertest	£5.80	Tir Na Nog	£7.60	Imp. Mission	£6.95
Dambusters	£7.50	Never Ending Story	£7.10	Soft Aid	£3.85
Grand Larceny	£4.99	Underworlde	£5.99	Elidon	£6.80
Battle of Britain	£7.10	Archon	£8.75	Doughboy	£7.10
Gremlins	£6.95	They sold a Million	£6.99	Stealth	£6.95
Imhotep	£7.10	Azimuth Head Tape	£6.70		
Mega Hits	£9.95	Karateka	£6.95		
		Quickshot II Joystick	£6.99		

Fast delivery. Send cheques/PO to:

SOFTWARE UNLIMITED DISCOUNTS (CH)
PO BOX 65, 8 THURLAND STREET, NOTTINGHAM NG1 3DR
Telephone: (0602) 470897 — Callers Welcome

SPECIAL REVS

ANALOGUE JOYSTICK: CBM64

Telephone (051-521 2202)

BULK PURCHASE BUSINESS SOFTWARE — HUGE REDUCTIONS — MENU DRIVEN EASY-TO-USE PROFESSIONAL PROGRAMS
SUPER MAIL — Address file/label printer c £4.95 d £5.95
SUPER STOCK — stock taking made easy c £4.95 d £5.95

CPI COPIER BACK-UP BOARD FOR THE CBM 64, CBM 128 & VIC 20

CPI will make back-up copies of all cassette based sotware including Turbos, slow loaders, variable speed loaders, basic, machine code, etc. Requires two CBM type cassette units. The CPI micro chip automatically generates a machine copy on the second cassette unit as it loads the original on the first. No additional software or programming knowledge rquired. 12 months guarantee. Price only **£9.50.** This is the best.

RESET SWITCH
Hand-held reset switch, resets machine code/basic programs. Basic recovery program included. CBM 64, VIC 20, CBM 128 **£3.95.**

QUICKSHOT II JOYSTICK.....**£8.75**
GUNSHOT II JOYSTICK.....**£8.75**
C16+4 ADAPTER FOR ABOVE.....**£3.95**

All prices include VAT and p&p UK only, Europe add £1.50; Rest add £2.50. Send cheques/POs to:

DATALINE
246 Horbury Road, Wakefield, West Yorks WF2 8RE

EDGE MEGASAVE SOFTWARE

46 THE MALTINGS, STANSTEAD ABBOTS, WARE, HERTS

COMMODORE 64	RRP	OUR PRICE		RRP	OUR PRICE		RRP	OUR PRICE
Robin of the Wood	9.95	7.40	Worm in Paradise	9.95	7.40	Neverending Story	9.95	7.40
Skool Daze	6.95	5.10	Ark of Yesod	9.95	6.50	Speca Pilot 2	9.95	7.40
Falklands 82	7.95	5.90	Now Games 2	9.95	6.75	Knightrider	9.95	6.75
Last V8	2.99	2.75	They Sold a Million	9.95	7.40	Rock 'n' Wrestle	9.95	6.75
Little Com. People (d)	14.95	12.50	Arcade Hall of Fame	9.95	7.40	Scalextric	9.95	7.40
Commando	9.95	7.40	Mercenary	9.95	7.40	Gyroscopa	7.95	5.90
Critical Mass	9.95	6.75	Evil Crown	9.95	7.40	Exploding Fist	9.95	7.40
Superman	9.95	7.40	Chess Game	7.95	5.90	Scarrabaeus	9.95	7.40
Fight Night	9.95	7.40	Secret O'y of e Mola	9.95	7.40	Wizard	9.95	7.40
Yir-Ar-Kung Fu	9.95	6.75	Blade Runner	9.95	6.75	Peradroid	7.95	5.90
Rambo	9.95	6.75	Mini Office	5.95	4.75	Monty of the Run	9.95	7.40
Enigma Force	9.95	7.40	Zoids	9.95	6.75	Commandoo (d)	14.95	11.95
Quake Minus One	9.95	7.40	O.T. Super Test	9.95	6.75	Wintar Gamas (d)	14.95	11.95
Winter Games	9.95	7.40	Fighting Warrior	9.95	6.75	Beach-head 2 (d)	14.95	11.95
Dynamite Dan	7.95	5.40	Beach-Head 2	9.95	7.40	Summer Gemes 2 (d)	14.95	11.95
Imhotep	9.95	7.40	Summer Games 2	9.95	7.40	Mind Shadow	9.99	7.50
Underwurlde	9.95	7.40	Impossible Mission	9.95	7.40	Betelyx	9.95	7.50
Lord of the Rings	15.95	12.95	Bettle of Britein	9.95	7.40	Elite	14.95	10.95
Racing Dest'tion Set	12.95	10.50	Starion	9.95	7.40	Spy vs Spy 2	9.95	7.40
Goonies	9.95	7.40	The Young Ones	7.95	5.90	Int. Basketball	5.95	4.50

All prices include free fast delivery and same day despatch. Overseas ordere add 50p.
Offers apply to mail order only. 10% discount on all orders for saven or more tapes or to e velua of over £45.
Chaques/POe payable to EO40.

EPIC SOFTWARE

Presents . . .

The Sorcerer's Apprentice

Who will be first to solve the mysteries of the planet Ogg and claim their prize?

You'll find clues to the prize we're offering, along with our phone number, in the adventure.

The race begins on March 1st, so send £7.50 now, to make sure you get your tape on time.

62 Wesley Road, Sandy, Beds. SG19 1RL

JOTHAN SOFTWARE

C16/PLUS 4 SOFTWARE	RPP	OUR
C-16 Classics (Dork's, Dilamma, Petels of Doom, Xergon Wars, Tycoon Tax pack)	9.95	6.50
Paintbox (graphics creator)	9.95	6.50
Steve Davis Snooker	7.95	6.75
D. Thompson Star Events	6.95	5.95
Games Pack 1 (15 games)	5.95	4.95
Games Pack 2 (15 games)	5.95	4.95
Grand Master Chess	6.95	7.75
Gull Wing Falcon	6.95	5.95
World Cup Football	6.95	5.95
The Boss (f'ball man'mant	6.95	5.95
Spiderman/Hulk Twin Pack	9.95	6.50
Cave Fighter	6.95	5.95
Airwolf	6.95	5.95
Timeslip	6.95	5.95
Circus/10 Little Indians Pack	7.95	6.75
Time Machine/Escape Pulsar 7 Pack	7.95	6.95
Invasion 2000AD	6.95	5.95
Hustler	6.95	5.95
Pacmania	5.95	4.95
Olympic Skiier	5.95	4.95
Air Combat Emulator	9.95	6.50
Flight Zero One Five	5.95	4.95
Sword of Destiny	6.95	5.95
Robcon Head Alignment Sy.	4.95	4.50
Home Office (database+word proc)	9.95	6.50

COMMODORE 64 SOFTWARE	RRP	OUR
Superbase 64	d 79.95	69.95
Invoatat	d 30.00	19.95
Home Accounts	d 16.95	9.95
White Lightning	c 19.95	16.95
	d 29.95	24.95
Basic Lightning	c 14.95	12.95
	d 19.95	16.95
Machine Lightning	c 29.95	24.95
	d 39.95	34.95
Jetpack Compiler	c 14.95	12.95
	d 29.95	24.95
Micro Magpie	d 39.95	35.95
Micro Wordcraft	d 24.95	21.95
Micro Swift	cd 19.95	17.50
Easy Stock	d 75.00	62.95
Easy File	d 50.00	42.95
Easy Spell	d 50.00	42.95
Easy Script	d 75.00	62.95
Paintbox	c 9.95	6.50
Anirog Sketch Pad	cd 49.95	45.95
Anirog Voice Master	cd 59.95	54.95
Mini Office	c 5.95	4.95
Head Alignment	4.95	4.50
Fast Load Cartridge	24.95	21.95

All prices include postage and packing in the U.K. (Please add 50p per item in Europe and £1.50 per item elsewhere). Please state which micro. Cheques or postal orders please, payable to:

JOTHAN SOFTWARE (Dept CH), 65 Heol Gwys, Upper Cwmtwrch, Swansea SA9 2XQ Tel: 0639-830934

Game creator

COULD you please advise me on which are the best program development aids for writing games of a commercially viable standard, and tell me where I can obtain them?
D Orrell
Manchester

IF YOU want to write commercial games you must learn macbine code. Tbere is no software package which will do the work for you; although tbe Mirrorsoft *Games Creator*, and other similar packages, allow you to design sprites, write tunes, define backgrounds and so on, the results are not truly commercial. Find a good book on 6502 machine code and get hold of the Supersoft Mikro Assembler (phone 01-861 1166), or look out for details of the new EDNA assembler from Viza Software, 0634-45002. This new package is said to be faster than any other assembler on the market.

1520 in 80 lines

I HAVE converted my 1520 printer/plotter to device address 4, and am trying to print out at 80 characters per line using Easyscript. At the moment characters shown as lower case on the screen print out as upper case, and vice versa. The same thing happens with Wordcraft 40. Is there any means of correcting this?
B R Britten
East Sussex

FIRST, a point to clear up about Easyscript and the 1520. There is no need to change the printer/Plotter's device number; by pressing F1, O, and D, the command line will show "DEVICE NUMBER". You can then enter 6, and P to print out on the 1520. The change will last until the computer is reset or the option used again.

The solution to your problem is to enter the following in direct mode before loading Easyscript;

OPEN 6,4,6 (or OPEN 6,6,6 if device number unchanged)

PRINT #6,1 (tben insert the disk)

LOAD"*",8,1

You will find this explained on page 37 of the 1520 manual, although some editions may deal with it elsewhere.

Tie a ribbon

WHILE using my MPS801 printer with my 64 recently, the print stopped appearing. The usual movements of the print head and needle matrix continued. Even using the self-test switch produced no results. Could this be a blown fuse, as the manual suggests?
Ian Davies
Porth

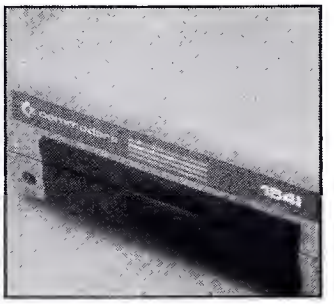
IT SEEMS more likely to be a problem with the ribbon. Check whether the cassette is still in place, witb the ribbon properly laced through the print head. If this doesn't solve the problem, try a new ribbon (of the Seikosha equivalent) wbicb can be purchased from any good computer supplies store. If you still have no luck, it might be that the print head has worked loose, and you will need to tighten it. Push the head assembly forward and tighten the two screws to either side, beneatb the cassette.

If all else fails, you'll have to get the machine serviced, eitber by Commodore or through a local dealer.

Tape to disk

I HAVE recently bought a 1541 disk drive, but I already have many fast-loading games on cassettes, and I would like to transfer them to disk. Is there any way to do this?
Alan Lloyd
Chester

YES IT can be done, by studying and altering the disassembled machine code, but as we've said before we won't give any advice on how to copy protected software, though you will see utilities advertised which will do this.



Fastload cassettes are, in any case, often as fast as normal disk programs; but you could try contacting the software companies concerned, many of whom will be prepared to exchange your cassette version for a disk copy.

Train of thought

I HAVE recently acquired a 64, 1541, printer and datasette, and I would like to transfer my trainspotting and photography records to the computer. Can you recommend a program which would fulfil my needs, bearing in mind that BR has 3000 locomotives, in roughly 50 classes; each has a six-figure number, with a space between the second and third figures; some have the names, the longest of twenty-five letters; each has a home depot with a two-letter code; I have 3000 slides, increasing at around 400 pa; the program must be able to access a particular locomotive, and add or delete; and preferably the record should be able to indicate whether a particular loco has been "spotted".
B Leighton
Whitfield
Dover

THERE IS a limit on the number of records which can be stored on one disk, and your requirements well exceed that limit. Although you could divide' the records up into different sections on different disks, you will need a pretty powerful package which will cost you around £80-£90. Try contacting Precision Software and getting some details of their Superbase package.

This has an option for a hard disk version; although this is very expensive and really intended only for business use, you will find that hard disk is the only way to get your whole record system on one disk. Precision are on 01-330 7166.

Fixing Vics

I HAVE a Vic 20 but have been unable to use it for some time as I cannot find a shop in my area which can sell me a replacement power supply. Can you help?
F Storey
Jarrow
Tyne & Wear

COMMODORE will still service Vics at their Corby headquarters, tbough the service is notoriously slow. They may, however, be able to suggest a local approved dealer who can carry out repair work for you much faster. Contact Commodore at 1 Hunter's Road, Weldon North Industrial Estate, Corby, Northants, 0536-205252.

Rampack problem

RECENTLY I bought a 16K switchable RAMpack for my Vic 20 (16K-3K). Will I be able to use 8K software? If not, is there a program which allows me to use it?
I T Moore
Daventry
Northants

YOU SHOULD be able to use 8K software witb tbe switch in tbe 16K position. Tbe RAM available sbould be from $0400 to $5FFF, of which Basic uses $1200 to $5FFF. If you try to load a macbine code program which extends past $5FFF tben it won't load, but it's bigbly improbable that any software producer would write a package wbicb loaded past the expansion on which it's designed to run.

"dialog...

SAVE £79.75 on Professional Business software for the CBM C64 & Plus/4 Computers

TRANSACT
Book-keeping System

TRANSACT is a book-keeping System and Nominal Ledger package
Provides a flexible alternative to manually operated systems
Observes normal accounting conventions
Suitable for Accountants and small business applications

Full Trial Balance printout excludes null Accounts
VAT payments and rebates controlled through Clearance Account
Produces Profit & Loss figure and 'quick' Balance Sheet

Price Cassette £29.95 Disc £34.95

SALES LEDGER
and invoice processor

Open Item Accounting System
Fast creation of invoices from product tables
Multiple rates of VAT allowable on invoices
Suspense accounts for 'unrecognised' payments
Trade and settlement discounts allowable
Extensive reporting to screen and printer
Clients referenced by name or part name

Price Disc £34.95

PURCHASE LEDGER

Open item Accounting System, Automatic payment runs, Print remittance advice notes, Allows for settlement and trade discounts, Cheque writing capability, Extensive reporting to screen and printer, Suppliers referenced by name or part name

Price Disc £29.95

STOCK-AID
Stock Control System

Single Screen Format displays:
Reference: Unique Stock Code/Description/Supplier
Prices: Current Unit Cost/Current Unit Sale
Inputs: Units Bought & Value to date + number of Transactions
Outputs: Units Sold & Value to date + number of transactions
Re-orders: Minimum Stock Level/Units to re-order & Value
Update: Balance & Value of Stock/Profit of Sales

Price Disc £34.95

Home Accounts Manager

HOME ACCOUNTS MANAGER is a comprehensive home management system designed to assist in the maintenance of any household budget. There are 4 major options from the main menu as follows:-

1. **HOME ACCOUNTS** Produces detailed expenditure
2. **BANK ACCOUNT** Full Bank statements, reports, etc.
3. **ADDRESS FILE** 50 Name Addresses
4. **UTILITIES**

Price Disc £19.95

We are offering our complete business set for an all in one price of **£75.00**.
A fantastic saving of **79.75!!**
Cheques made payable to Dialog Software

VISA

"dialog...

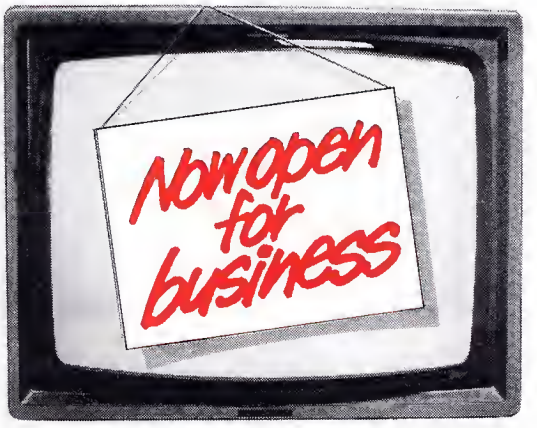
Access

DEBDEN GREEN SAFFRON WALDEN ESSEX CB11 3LX Phone: 0371 831009

C128 Software Now available. Phone for Details

Stop playing games– Start earning money!

The computer that's been giving you such a fun time with games now gives you the chance to earn some money. Helping you with word processing, secretarial work and even running your own business. All because of the brilliant new word processing package, SuperScript from MicroPro — the makers of WordStar — the world's best selling word processing packages for microcomputers.



SuperScript

writes letters, invoices, reports, tables, documents, it stores, edits and even checks spelling.

Versatile SuperScript SuperScript combines word processor, spelling checker, calculator and mail-merge facility, all in one package. So SuperScript gives you all the tools you need to produce high quality reports, tables, lists, personalised letters and prints labels quickly and efficiently.

Simple for the beginner If you are a newcomer to word processing, SuperScript puts you immediately at ease.
Each command is a single word, and for each command you simply move the cursor. You don't even have to type the command.

Good with numbers SuperScript allows you to extend your editing line up to 250 columns for wide documents like financial statements, and with decimal tabs it's easy to enter properly justified tables of numbers.
SuperScript's complete set of calculator functions can be used interactively or you can operate on numbers from the text of your document. Apart from the usual mathematical functions like add, subtract, multiply, divide, and percentages, you have the ability to add rows, columns or even whole tables.

Good with spelling, too The built-in spelling checker goes right through your text, checking for errors. You have the option to correct any error, ignore it, or add the word to its 30,000 word dictionary.

Editing options SuperScript gives you all the editing options of a business-style word processor, with full block manipulation for cut-and-paste; overtype or text insertion modes; search and replace with pattern matching and optional case discrimination; backward search, case shifts for single words or larger blocks of text. And much more.

Powerful for the experienced user SuperScript also gives you the ability to cut work down to a minimum by storing your own command sequences or text on single keys. This means that with a single keystroke you can reproduce commonly used phrases or multi-line addresses from a glossary, load in document formats or execute a pre-programmed sequence of operations.

Mailings with SuperScript Personalised mailings are easy with SuperScript. You can enter the data manually or use data extracted from your spreadsheet or database. Merging can be selective. A mailing labels template is included to help you complete your mailing and you can alter the template to suit your own label format.

Attention Easy Script users! If you're already an Easy Script user, then SuperScript is the obvious next step. With its enhanced features and more powerful facilities, you'll be able to do so much more. There are no compatibility problems either. You can run your Easy Script data or Easy Spell dictionary disks under SuperScript. And by returning your Easy Script disk can obtain an upgrade for just £49.95.

AVAILABLE FOR
COMMODORE 64, 128
ATARI 800XL, 130XE · APPLE IIc, IIe
SuperScript Word Processing Software is available direct complete with Comprehensive User Manual. Only £79.95 including VAT and Postage.
OR FROM ALL GOOD DEALERS.

NEW WORD PROCESSING PACKAGE SuperScript

MicroPro International Ltd
MicroPro. Haygarth House, 28-31 High Street, Wimbledon Village, London SW19 5BY

ORDER BY PHONE
ASK YOUR LOCAL DEALER FOR THE SUPERSCRIPT PACKAGE, OR ORDER DIRECT BY PHONING
0483 503121
QUOTING YOUR CREDIT CARD NUMBER OR BY COMPLETING AND RETURNING THE ORDER FORM WITH YOUR CREDIT CARD DETAILS OR REMITTANCE

SuperScript ORDER FORM

To Dept H02, CUMANA Ltd, Pines Trading Estate, Broad Street, Guildford, Surrey GU3 3BH

Please supply the following:

QTY ☐ SuperScript £79.95 (includes P&P) for*_____ computer

QTY ☐ †Upgrade for Easy Script £49.95 (includes P&P) for*_____ computer

†(Your existing Easy Script disk should be returned with this order.) *Commodore 64, 128. Atari 800XL, 130XE. Apple IIc, IIe

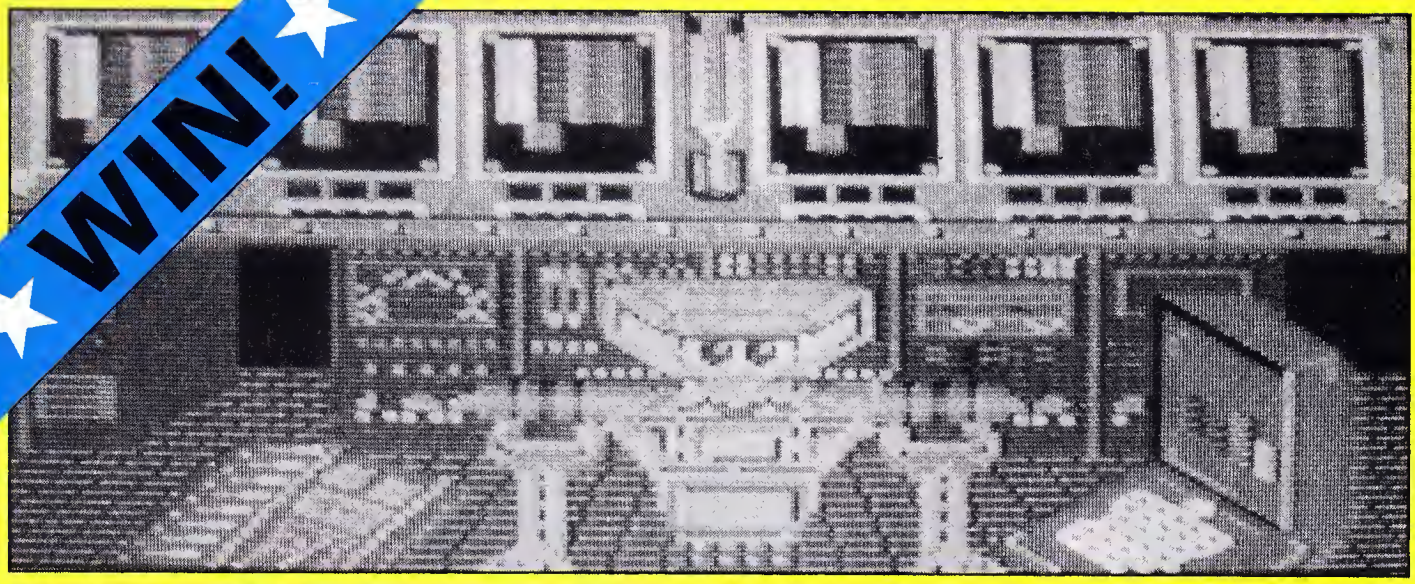
I enclose remittance for £_____ (Cheques made payable to CUMANA Ltd). Or charge my credit card

Access/Visa No. ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ Signature _____

Name _____
(BLOCK CAPS)
Address _____

_____ Postcode _____

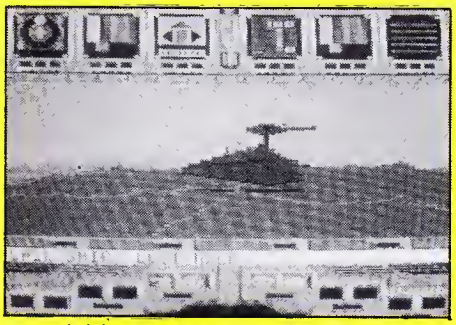
If you are intending to use SuperScript for a specific purpose, we should be interested to have details. Thank You _____



KORONIS RIFT

Twenty copies of Activision's third Lucasfilm game for the 64 are up for grabs!

THIS IS your chance to win a copy of the third great 64 game to come from the Lucasfilm Corporation. **Koronis Rift**, follow-up to **Rescue on Fractalus** and **Ballblazer**, is a sophisticated animated arcade adventure in which you play the part of an interstellar technoscavenger. Can you find the hidden treasures of the legendary planet Koronis?



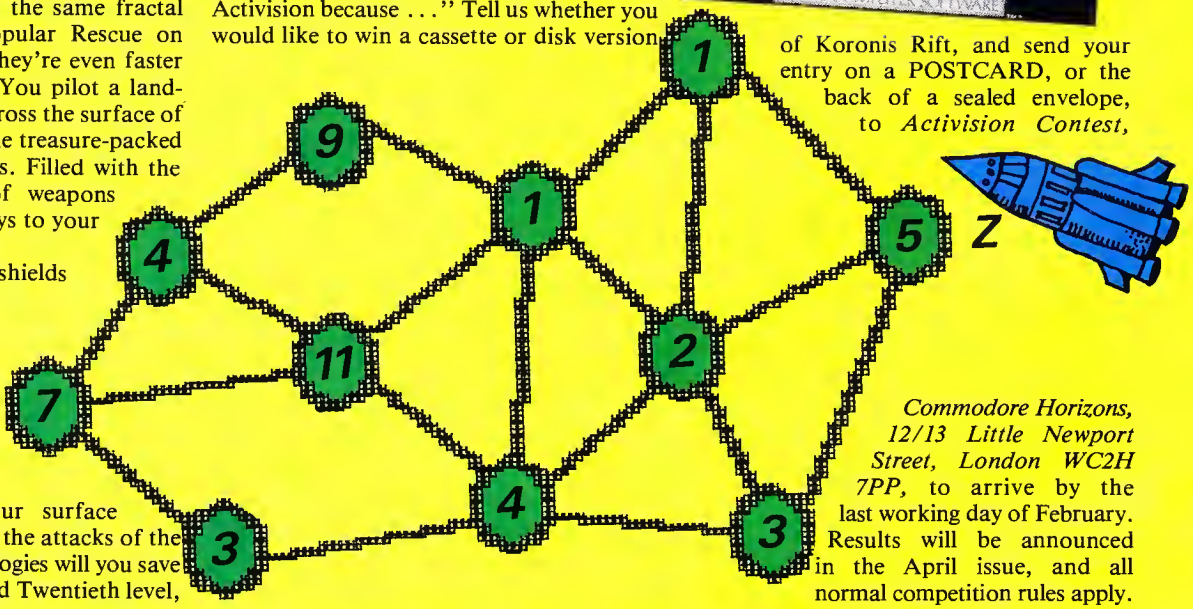
Activision's game uses the same fractal graphics seen in the popular Rescue on Fractalus, but this time they're even faster and more sophisticated. You pilot a land-based tank-like vehicle across the surface of the planet, in search of the treasure-packed hulks left by the Ancients. Filled with the results of generations of weapons tests, the hulks are the keys to your fortune.

Which weapons and shields will you pack into your surface rover to protect you from the attacks of the Guardians? Which technologies will you save in order to reach the fabled Twentieth level, and accumulate enough kilocredits to retire?

Koronis Rift normally costs £9.99 on cassette, or £14.99 on disk, but we have twenty copies to give away in our great easy-to-enter contest.

All you have to do is look at the diagram of the planet's surface we have drawn for you. You start at point A, and you must reach point Z. Along the way you must visit the spacewrecks and collect credits. You must accumulate as many credits as possible. BUT YOU CANNOT TRAVEL THE SAME PATH TWICE.

Work out **how many credits** you will have at the end of your journey, by collecting as many as possible without travelling the same path twice. Write the number on a postcard, along with your name and address, and complete this tie-breaker sentence in an apt, original and amusing way in fifteen words or fewer; "I want to explore space with Activision because . . ." Tell us whether you would like to win a cassette or disk version of Koronis Rift, and send your entry on a POSTCARD, or the back of a sealed envelope, to *Activision Contest, Commodore Horizons, 12/13 Little Newport Street, London WC2H 7PP,* to arrive by the last working day of February. Results will be announced in the April issue, and all normal competition rules apply.



NEW RELEASES

Bond... Basildon Bond

"THE ADVENTURES OF BOND . . .
BASILDON BOND"
Starring
RUSS ABBOT
Featuring
COOPERMAN, BLUNDERWOMAN, BOND

Under strict and confidential orders from P, who has been re-named B, to confuse the KGB, Bond has been assigned to rescue Russ who is being held captive by a rival comedy act, in the dungeons of the television studio.

Traps, puzzles, jokes, fight sequences and famous characters are combined to produce a funny and slightly hilarious arcade adventure.

Featuring Russ Abbots New Single
"LETS GO TO THE DISCO"

NEW
£9.99 cassette
£13.99 disk

Available for the Commodore 64

Soon available for the Spectrum & Amstrad

The Devils Crown

The most amazing arcade adventure to be released for the Amstrad is NOW available for the Spectrum.

Amstrad Action Review — A.A. Rave
Graphics 94% Sonics 75% Grab Factor 85%
Staying Power 89% AA Rating 87%

Amstrad £9.99 Cassette. £13.99 Disk
Spectrum 48K £8.99

Screen shots from Amstrad version

PROBE SOFTWARE

155 MITCHAM ROAD, LONDON SW17. Tel: 01-672 9179

Selected titles available from
W.H. Smith Boots Laskys and all good software retailers

2K SPECTRUM £7.95
COMMODORE 64 £7.95
AMSTRAD £8.95

PING PONG

The officially endorsed version of the No.1 arcade game by **Konami®**

Imagine ... the name of the game

Imagine Software (1984), 6 Central Street
Manchester M2 5NS. Tel: 061-834 3939. Telex: 669977

*You can almost feel the tension of the big match breaking through the screen . . . the expectant crowd is almost on top of you! You return the service with a **Top-spin Backhand,** then a **Forehand Back-spin,** the ball bounces high from your opponent's looping, defensive lob . . . **SMASH!** . . . a great shot opens the score . . . but this is only your first point! Play head to head or against the computer in this, Konami's first and best table-tennis simulation.*

Imagine Software is available from selected branches of: Boots, WHSMITH, John Menzies, WOOLWORTH, LASKYS, Rumbelows, Greens, Spectrum Shops and all good dealers.